

Seeking Truth From Facts

A Retrospective on Chinese Military
Studies in the Post-Mao Era

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Preface

This volume is the product of a conference, jointly sponsored by the RAND Center for Asia-Pacific Policy (CAPP) and the Taiwan-based Chinese Council of Advanced Policy Studies (CAPS). The meeting was held in Washington, D.C., from 8 to 11 July 1999. The meeting brought together many of the nation's top experts to assess the last 20 years of trends in Chinese civil-military relations, force structure, doctrine, and capabilities, as well as the state of the China military studies field. The resulting volume is a comprehensive retrospective on Western research on the People's Liberation Army in the last quarter of the twentieth century.

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Introduction

Since the beginning of Deng Xiaoping's reforms in the late-1970s, the Chinese military has undergone profound changes in nearly all areas of activity. In a parallel and perhaps related development, the field of China military studies in the United States has also witnessed dramatic growth over the last 20 years. The membership of the field has expanded substantially in sheer numbers, but also incorporated a wider spectrum of backgrounds and expertise. The body of literature produced by these individuals is immense and diverse in sources, viewpoints, and predictions on the progress of China's military modernization. As the twentieth century came to a close, it was perhaps natural for the Council of Advanced Policy Studies (CAPS), RAND, and the regular participants in their annual Chinese military conference to reflect back on the events and trends since the onset of reform.

Between 8 and 11 July 1999, more than 30 People's Liberation Army (PLA) specialists from around the world met in Washington, D.C., to present and discuss a series of retrospective papers on civil-military relations, force structure, doctrine, capabilities, and the state of the field. The paperwriters and their commentators were charged with looking backwards, identifying critical trends of the past 20 years, and extrapolating these trends for the future. The authors were also encouraged to honestly examine the analysis of their colleagues, lauding those whose assessments were correct and investigating the causes and consequences of assessments that were mistaken. This volume is the product of their efforts.

Thomas Bickford's chapter provides an overview and critical assessment of 20 years of debate on Chinese civil-military relations. Two approaches to the subject are highlighted. The first approach emphasizes factions and personalism in Chinese civil-military relations. The second argues that the PLA is becoming more professional and less political as time goes on. Each approach offers insights and strengths, though problems with both sets of analyses are also assessed. Using these frameworks, the author examines civil-military relations in the decade before the Tiananmen massacre, civil-military relations during and immediately after the Tiananmen demonstrations, and civil-military relations in the 1990s. The chapter highlights how scholarship on Party-army relations has evolved since the 1980s. A final section looks at

potential areas for future development in the study of the PLA and its relationship to the state and the Party.

David Shambaugh's commentary on the Bickford chapter highlights the changing nature, composition, and "rules of the game" of civil-military relations in China during the 1990s. As the PLA has become more professional, he argues that pressures for institutional separation from the Communist Party have grown. This is reinforced by the ascent of the "third generation" of Party leaders, who come from technocratic rather than military backgrounds. This increased Party-army bifurcation is primarily reflected at the top of the Party and military hierarchies, but is also reflected at lower levels of the institutions. As a result of these fundamental changes in the 1990s, several long-serving models of explanation of civil-military relations in China have lost their explanatory efficacy. New models of explanation and methods of analysis are needed, including placing the Chinese military (and its relationship to the ruling party) in broader comparative perspective with other developing countries.

Dennis Blasko's chapter, entitled "PLA Force Structure: A 20-Year Retrospective," discusses the relationship between changes in the structure of China's armed forces and Chinese military doctrine. It assesses a wide range of periodicals, books, articles, U.S. government studies, and congressional testimonies concerning ground, air, naval, and strategic forces, as well as force reductions and the personnel system. The body of work examined includes writings from Harlan Jencks, Ellis Joffe, Paul H. B. Godwin, Monte Bullard, Michael Swaine, Ken Allen, Eric McVadon, Iain Johnston, Richard Fisher, Larry Wortzel, Maj. Mark Stokes, and Alfred D. Wilhelm, Jr., among many others. The chapter ends with a brief description of force structure developments at the turn of the century and concludes that the amount of structural change underway in the PLA today is bound to be disruptive to the combat readiness of the force. These changes portray a military undergoing a gradual, deliberate, long-term modernization process that merits careful monitoring and objective analysis by China's Asian neighbors, the United States, and other Western countries.

Paul Godwin's chapter on doctrine argues that PLA operational planning faced demanding change as Beijing's national military strategy transitioned from continental defense and attrition warfare to cyberwar and defense of China's maritime approaches and territorial claims. Nonetheless, even as new doctrine evolved, it was indelibly marked by Mao Zedong's core concepts from the 1930s. As in the past, continuing deficiencies in modern arms and supporting systems required PLA planners to develop and apply doctrine designed to

compensate for these deficiencies. Consequently, the essence of Mao's principles persevere. First, the PLA shall not be passive in the face of militarily superior adversaries. Second, *active defense* remains at the center of PLA doctrine. This doctrine directs the PLA to conduct operations designed to seize and sustain battlespace initiative. The most difficult change to absorb is the transformation of the PLA from a ground-force-dominated institution to a joint service defense force. Although this transformation is far from complete, PLA planners recognize that joint service operations using a multi-dimensional force structure are now essential for success in the contemporary and future battlespace.

Using his commentary on Paul Godwin's chapter as a platform, David Finkelstein launches into an essay that addresses the general importance of operational doctrine for all militaries and parses the important distinction between "doctrine" and "strategy." Most importantly, however, he makes a strong case for the need of all analysts of the Chinese armed forces to acquire a critical understanding of PLA doctrinal developments regardless of their specific areas of research. In effect, he argues that using doctrine-centric analysis is a useful way for analysts to think about how the PLA envisions itself fighting in the future; provides a window into the civil-military elite dynamic; conjures a context for weapons development and acquisitions; is an indicator of the PLA perception of the most likely threat; and can be used to explain force structure changes and training innovations. Perhaps the most interesting aspect of Finkelstein's essay is his assertion that one plausible way in which to measure the progress of PLA warfighting reforms is finding a metric by which to measure the "doctrine-capabilities" gap, a much more comprehensive task than merely looking at weapons and platforms.

Alexander Chieh-cheng Huang also adds to the Godwin chapter on doctrine by examining the evolution of the people's war doctrine from Beijing's perspective, based on Chinese military publications and discussions with PLA officers in recent years. In his chapter "Transformation and Refinement of Chinese Military Doctrine," Huang argues that Deng Xiaoping's support for the doctrine of "people's war under modern conditions" marked a fundamental transformation from Mao Zedong's guerrilla-type operations to modern warfare. However, the PLA's recent emphasis on "winning local wars under high-tech conditions" is not a departure from Deng's military thought, but a doctrinal fine-tuning effort that focuses more on technology and revolution in military affairs. Huang also makes an important observation that the gap between China's pronounced military doctrine and actual warfighting capability was much wider now than during Mao's era of people's war. Military

doctrine, in the past, was developed from the PLA's early combat experience, but today has become a guideline for China's army-building and its conduct of future warfare.

Given the recent upsurge in concern over Chinese military power—"asymmetrical" warfighting doctrine, missile buildups, high-tech espionage, and views of future warfare—Bates Gill's chapter provides a timely review of the record of analysis in the West as to China's military-technical development since 1979, paying particular attention to methodology. To do so, this chapter proceeds in three principal sections. First, it reviews the literature on the topic from 1979 to 1999 by discerning its principal "phases." Second, the chapter goes on to assess the literature by considering its principal themes, debates, inaccuracies, and prescient predictions. Finally, the concluding section draws lessons from this assessment by considering sources and methods, suggesting where analysts got it right and why, and seeing where future research should be headed. Among the paper's principal findings: Those issues of greatest interest in the broader field of security studies on China are reflected in the literature on Chinese military modernization; and the single-most consistent theme in the literature of Chinese military-technical development stresses the problems which China faces, rather than the accomplishments it has achieved, though more recent research in this field raises new concerns about increasing Chinese military capabilities. Future research needs to integrate more understanding from technical and industrial fields and find ways to better analyze the "aspirations versus capabilities" gap.

Larry Wortzel's chapter seconds most of the conclusions in Gill's chapter, but raises two additional concerns: The role of international politics in China's military-technical development and who is qualified to assess military-technical capability and progress. With the collapse of the Coordinating Committee for Multilateral Export controls (COCOM), the author argues that international cooperation on export controls has become ineffectual. Due to differing threat perceptions and national interests, the Madrid Sanctions of 1989, which banned the sale of complete systems to China, have been circumvented as many countries allowed the transfer of technology and components. Wortzel also argues that new methodology needs to be used in researching China's military-technical progress. Most studies of China's defence industry were conducted by people lacking experience in the design, systems engineering and production of military and high technology systems. According to the author, further research into this area should include authors or interviews with people who have expertise in these areas.

Jonathan Pollack's chapter surveys the PLA field as a whole, using the annual CAPS conference volumes to chronicle the preoccupations among specialists on the PLA and capture the changing contours of the field. The author concludes that the record of scholarship since 1988 is an impressive one, with the collective efforts of scholars and policy analysts testifying to the PLA's centrality in the study of contemporary China and the growing political and strategic significance of Chinese military power. The community of PLA watchers, though necessarily specialized, is far larger and much more analytically sophisticated than when the CAPS volumes first appeared more than a decade ago. The focus of most contributions to these symposia has been predominantly descriptive and interpretive and the cumulative results ever more substantial. Though the growth of the field renders the challenge of integration ever more pressing, the subject matter as a whole seems far less obscure or unknown, though some research areas continue to elude comprehensive understanding. Overall, however, a field of study exists today that barely seemed possible ten years ago, with the CAPS volumes an indispensable mainstay of the professional literature. Even as the politicization of PLA scholarship poses a potential risk to rigorous analysis, the annual symposia attest to the field's depth and sophistication. PLA studies have thus assumed a life of their own, with the CAPS symposia integral to this process.

Ellis Joffe's chapter brings the discussion to a close by providing a succinct overview of the past 20 years in the field, presented as "Eight Points for Attention." Among these, Joffe argues that the central role of the Chinese military in U.S.-China relations has become a fact of life, for better or worse, and the field should take advantage of it to expand PLA studies and to get the results to a broader audience. To this end, members should try to introduce courses in political science departments and encourage graduate students to consider PLA studies as a field of specialization. Looking back, the author asserts that the field was surprisingly prescient in many of its predictions, especially given the nature of our information. He asserts that the field should not be faulted for failing to predict the Tiananmen crisis and the PLA's actions, since the events were not even predicted by China's political or military leaders. For the future, Joffe asserts that the primary challenge facing the field is the glut of information about the PLA that is at our disposal. In response, scholars should look for patterns and trends, but humbly admit that we do not have enough evidence to decide on one overarching theoretical model for guidance.

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Acronyms

AAPSS	The American Academy of Political and Social Science
AMS	Academy of Military Science
AWACS	Airborne Warning and Control System
BAI	Battlefield Interdiction
BDA	Bomb Damage Assessment
BMD	Ballistic Missile Defense
C3I	Command, Control, Communications, and Intelligence
C4I	Command, Control, Communications, Computers, and Intelligence
CAD/CAM	Computer Aided Drawing/Computer Aided Manufacturing
CAMA	<i>Chinese Aeronautics and Missilery Abstracts</i>
CAPP	Center for Asia-Pacific Policy
CAPS	Council of Advanced Policy Studies
CAS	Close Air Support
CCP	Chinese Communist Party
CEP	Circular Error Probable
CMC	Central Military Commission
COCOM	Coordinating Committee
COG	Center of Gravity
COSTIND	Commission of Science, Technology, and Industry for National Defense
COTS	Commercial Off the Shelf

CRS	Congressional Research Service
CSIS	Center for Strategic and International Studies
DIA	Defense Intelligence Agency
DoD	Department of Defense
DPRK	Democratic People's Republic of Korea
DTIC	Defense Technology Information Center
FAC	Fast Attack Aircraft
GAD	General Armaments Department
GMD	Guomindang (Nationalist Party)
GPD	General Political Department
ICBM	Intercontinental Ballistic Missile
IISS	International Institute for Strategic Studies
IOC	Initial Operating Capability
IRBM	Intermediate-Range Ballistic Missile
ISDPC	International Security and Defense Policy Center
IW	Information Warfare
JPRS	Joint Publications Research Service
KMT	Kuomintang
LW	Local War
LWUMHTC	Local War Under Modern Hi-Tech Conditions
MOOTW	Military Operations Other Than War
MR	Military Region
MR/IRBM	Medium-Range/Intermediate-Range Ballistic Missile
MRBM	Medium-Range Ballistic Missile
MTW	Major Theater War

NATO	North Atlantic Treaty Organization
NBC	Nuclear, Biological, and Chemical (weapons)
NCO	Non-Commissioned Officer
NDL	National Defense Law
NDSTC	National Defense Science and Technology Commission
NMD	National Missile Defense
NPC	National People's Congress
NSRD	National Security Research Division
OTH	Over the Horizon
PAP	People's Armed Police
PCC	Production and Construction Corps
PD	Primary Doctrine
PGM	Precision-Guided Munitions
PL	Preliminary Doctrine
PLA	People's Liberation Army
PLAAF	People's Liberation Army Air Force
PLAN	People's Liberation Army Navy
PLANAF	People's Liberation Army Navy Air Force
PPL	Pre-Preliminary Doctrine
PRC	People's Republic of China
PW	People's War
PWUMC	People's War Under Modern Conditions
R&D	Research and Development
RD	Residual Doctrine
RMA	Revolution in Military Affairs

RRU	Rapid Reaction Unit
S&T	Science and Technology
SAM	Surface-to-Air Missile
SCPS	Sun Yat-sen Center for Policy Studies
SIPRI	Stockholm International Peace Research Institute
SLBM	Submarine-Launched Ballistic Missile
SLOC	Sea Line of Communication
SSBN	Nuclear-Powered Ballistic Missile Submarine
SSN	Nuclear-Powered Attack Submarine
TDA	Table of Distribution and Allowances
TO&E	Tables of Organization and Equipment
USA	U.S. Army
USAF	U.S. Air Force
USN	U.S. Navy

1. A Retrospective on the Study of Chinese Civil-Military Relations Since 1979: What Have We Learned? Where Do We Go?

By Thomas J. Bickford
University of Wisconsin-Oshkosh

The past 20 years have seen many changes in the People's Liberation Army and the Chinese political system. Despite limited information and other problems inherent in the subject, it has been a very productive time in the study of Chinese civil-military relations, and the field currently enjoys a large and varied literature. Twenty years of research and debate have produced some important points of agreement. The PLA remains an important political factor in Chinese politics though there has been considerable debate about how extensive that role actually is. Everyone also agrees that the military has been largely loyal to civilian (that is, Communist Party) leadership and that any understanding of Chinese civil-military relations must take this into account. Indeed, overt challenges to civilian rule are rare in all Leninist regimes.¹ It is also generally agreed that PLA officers are better trained, educated, and professionally oriented than 20 years ago. Yet in many respects, there was greater clarity at the beginning of this 20-year period than there is now. At the beginning of the 1980s there were two rather distinct approaches to interpreting civil-military relations in China and the trends seemed fairly clear. Today, there is a greater diversity of analytical approaches and the available evidence, as Ellis Joffe has noted, provides a confusion of trends and countertrends.² Much work remains to be done if we are to understand how civil-military relations in China are evolving. This paper provides an overview of the past 20 years and a critique of what has been written, where scholarship has been accurate, and where it has

¹There are very few cases of direct military challenges to established party leadership in Leninist regimes. The best-known cases are the 1991 coup attempt in the Soviet Union, the military's rebellion in Romania in 1989, and the assumption of military leadership of the Communist Party in Poland. There has also apparently been a coup attempt in North Korea in 1995 and there have been consistent reports of coup plots in Bulgaria and Czechoslovakia in the 1960s.

²Ellis Joffe, *The Military and China's New Politics: Trends and Counter-Trends* (Taipei: Chinese Council on Advanced Policy Studies, CAPS Papers No. 19, 1997).

failed to correctly analyze the situation. The first three sections of the paper cover analyses of civil-military relations before Tiananmen, the impact of Tiananmen, and the study of Chinese civil-military relations in the post-Tiananmen era. In some respects this is a rather arbitrary division as many of the key conceptual ideas that informed our debate about civil-military relations in the early-1980s are still very much in use. In the 1980s we debated the utility of factional analyses and we still argue about factions today. At the end of the 1990s military professionalism is still the dominant paradigm. This format was chosen in part because I want to show there has been some evolution in our thinking, and in part because I wish to make the argument that the political milieu in which civil-military relations operate is in many ways different in the 1990s than in the 1980s. The three phases of this chapter ask different questions and address different issues.

In the 1980s the most fundamental question was: What kind of military was to emerge out of the Maoist era and how would its role be defined? Military reform took place within the political context of a regime with new goals but continued to be dominated by the old revolutionary elite. Tiananmen deserves a short section in its own right. As the most important political crisis in post-Mao China, it produced an extensive literature and created an opportunity for PLA scholars to examine the PLA under a very different set of conditions. During the third phase of the 1990s, I argue, the PLA continues to be in transition, but the focus shifts to trying to understand civil-military relations at a time when new and truly distinct military and civilian elites are emerging for the first time. The conclusion of the paper will suggest areas for future scholarship into the next century. In particular, it will be argued that PLA scholars have taken current ideas as far as they can go and it is increasingly important to tap into the wider civil-military literature outside Chinese studies.

The Study of Civil-Military Relations in the Early Dengist Years: 1979–1989

The Third Plenum of Eleventh Central Committee in December 1978 marked a major turning point in the Chinese political system and the beginning of wide-ranging economic, social, political, and military reform. It also marked an end to Mao's emphasis on "continued revolution" and a repudiation of the radical policies of the Cultural Revolution in favor of an emphasis on rapid economic development, pragmatism, and opening to the West. In terms of military reform, the coalition around Deng wanted a more modern and technically

qualified military, signaling a return to the professionalization of the 1950s and a reduction in the PLA's extra-military roles.³ The political environment was relatively benign to military reform and by the end of the 1980s the PLA was more modernized and professionally oriented than at any previous time in its history. The political environment was also very much shaped by the remaining revolutionary elders in the Party and civil-military relations in China have to be understood against that background.

For most of the 1980s, debate on the study of Chinese civil-military relations was dominated by two basic approaches: factionalism and professionalization (also sometimes referred to as the interest group model). Both approaches pre-date military reform. Each approach has its merits and the role of factions and the degree of military professionalization continue to be important points of debate down to the present. It will be useful, therefore, to begin this discussion with a brief summary of the two approaches.

Factional models have long been popular among some China watchers, especially in Hong Kong and Taiwan. This approach stresses the existence of personal networks and cliques in the PLA as the primary locus of civil-military relations. It is an approach that assumes a high degree of politicization, as personal networks determine the rise and fall of individuals, policy outcomes, and interactions between the Party and the military. There have been a number of different types of factional models. Nelson, for example, based his factional model on the cleavages between regional and main force units.⁴ Another variant was a factional model based on generations. Advocates of this approach argued that it was possible to identify groupings based on generational experiences. Each generation was posited as having its own specific experiences that defined its outlook and unified its members. The standard version of this argument divided the current officer corps into rough groupings, including the Korean War generation, the Cultural Revolution generation, the revolutionary war generation, and so forth.⁵

Most of this type of analysis, however, centered on the field army hypothesis, of which the best (and oldest) U.S. exposition is Whitson's *Chinese High*

³Most observers would agree that some concern for military modernization and professional qualifications continued during the Cultural Revolution but it was limited. The main periods of military modernization are in the 1950s and after 1979.

⁴Harvey W. Nelson, *The Chinese Military System: An Organizational Study of Chinese People's Army*, 2nd ed. (Boulder: Westview Press, 1981).

⁵See William W. Whitson and Chen-Hsia Huang, *The Chinese High Command: A History of Communist Military Politics, 1927-71* (New York: Praeger, 1973), chapter nine; William Parish, "Factions in Chinese Military Politics," *The China Quarterly* No. 56 (October 1973), pp. 667-699; and William del Mills, "Generational Change in China," *Problems of Communism* (November/December 1983), pp. 16-35.

Command.⁶ Briefly put, the field army thesis argues that during the course of the Chinese revolution, military factions emerged that centered on the five separate field armies. These military factions were forged as a result of shared dangers and experiences, with years of close personal contact among each faction's members. Advocates of the field army thesis claim that these factions continue to this day and military involvement in politics is read primarily in the context of these military groups, particularly how they balance each other, form coalitions with other groups in the Party, and so forth. During the Cultural Revolution, this dynamic was believed to explain who sided with Lin Biao in his 1971 coup attempt (fellow Fourth Field Army men). In the 1980s, Deng Xiaoping's hold over the military was judged to be the result of his cramming the military leadership with Second Field Army men who served with him during the Chinese Revolution.⁷

These factional analyses of the PLA included non-military elements as well. As many of the civilians in the Chinese leadership served in the field armies before 1949, factional behavior is seen as crossing the military-civilian line, thus bringing the military into politics and politics into the military. This was further facilitated by the fact that many Chinese Communist Party leaders held both military and non-military positions and that all high-ranking PLA officers were members of the CCP. Several of those who wrote about factions in the 1980s saw a complex web of field army and other factions connecting civilian and military cadres and argued that the distinction between military and civilian elites was artificial and that civil-military relations should be seen as a "process of coalition politics among factions."⁸ In this regard, some of the factional analyses are not unlike the "symbiosis" argument put forth by David Shambaugh and others (to be discussed in a later section) in that both argue there is no clear line of distinction between Party and army in the Chinese Leninist regime and that the system is one of a dual elite.

In contrast to the field army thesis and other factions is the professionalization approach. This approach derives from Huntington's work on military professionalism⁹ and argues that the Chinese military is essentially professional

⁶Ibid. Whitson, *Chinese High Command*; Jurgen Domes, *P'eng Te-huai: The Man and the Image* (Stanford: Stanford University Press, 1985). Parris Chang has also been an exponent of this view. See, for example, Parris Chang, "Chinese Politics: Deng's Turbulent Quest," *Problems of Communism* (January/February 1981), pp. 1-21.

⁷See, for example, Yu Yulin, "Reshuffle of Regional Military Leaders on the Mainland," *Issues and Studies* (June 1990), pp. 1-4.

⁸June Teufel Dreyer, "Civil-Military Relations in the People's Republic of China," *Comparative Strategy*, Vol. 5, No. 1 (1985), p. 28.

⁹Samuel P. Huntington, *The Soldier and the State: The Theory and Politics of Civil-Military Relations* (Cambridge, Mass.: The Belknap Press of Harvard University Press, 1957).

in its outlook. The main writers here have been Ellis Joffe, Harlan Jencks, and Paul Godwin.¹⁰ Huntington makes a distinction between those who pursue a career for monetary gain and those who, as professionals, "pursue a 'higher calling' in the service of society."¹¹ Simply wearing a uniform does not make an officer a professional. Military professionalism, as with other types of professionalism, is made up of three components: expertise, responsibility, and corporateness.¹² Expertise refers to the central skill of the military officer in "the management of violence."¹³ Competence in this requires lengthy training, and the resulting expertise is fundamentally different from the expertise of other professions, though universal in that ideology, place, or time do not alter this qualification. What makes a good officer in the United States also makes a good officer in Japan, or Great Britain, in the nineteenth century or in the twentieth.

This special expertise, according to Huntington, engenders a special sense of social responsibility. This responsibility takes three forms.¹⁴ First, the professional officer represents the claims of military security of the state. It is he who informs the authorities about what is necessary to guarantee the safety of the state in a potentially hostile international environment. Second, he has an advisory capacity, reporting to the state on the implications of alternative courses of action from the military perspective. Third, the professional officer is responsible for the implementation of state decisions requiring his particular expertise. The military, unlike other professions, has but one client, the state. Above all else *this is an apolitical arrangement, since the professional officer is the servant of the state and not an individual, a political organization, or an ideology*. Furthermore, the professional officer does not serve for personal gain or because of a temporary emergency such as a war, which may invoke intense but temporary feelings of patriotism or duty. A professional serves out of a "technical love for his craft" and a desire to use his knowledge for the benefit of

¹⁰See Ellis Joffe, *Party and Army: Professionalism and Political Control in the Chinese Officer Corps, 1949–1964*, Harvard East Asian Monographs (Cambridge, Mass.: Harvard University Press, 1965); Ellis Joffe, *The Chinese Army After Mao* (Cambridge, Mass.: Harvard University Press, 1987); Harlan W. Jencks, *From Muskets to Missiles: Politics and Professionalism in the Chinese Army, 1945–1981* (Boulder: Westview Press, 1982); Paul H. B. Godwin, "Professionalism and Politics in the Chinese Armed Forces: A Reconceptualization," in Dale R. Herspring and Ivan Volgyes, eds., *Civil-Military Relations in Communist Systems* (Boulder: Westview Press, 1978), pp. 219–240; and Paul H. B. Godwin, *Development of the Chinese Armed Forces* (Maxwell Air Force Base: Air University Press, 1988).

¹¹Huntington, *Soldier*, p. 8.

¹²Ibid., especially pp. 8–18.

¹³Huntington quoting Harold Lasswell. Ibid., p. 11.

¹⁴Ibid., p. 72.

society.¹⁵ He is thus different from the mercenary, the temporary citizen-soldier, or those who see the military as a mere occupation.

The third characteristic of the military profession is that of corporateness. The officer corps is a public bureaucracy, though the legal right to belong is carefully defined. Entrance to this bureaucracy is restricted to those with the necessary skills and training. Levels of competence are distinguished by rank, reflecting professional achievement in terms of experience, ability, education, and seniority.¹⁶ Ranks are normally awarded within the profession itself based on its own internal criteria. The specialized knowledge of the military helps give it a special sense of identity. It is the military professional who defines the boundaries of that profession by excluding others, such as reserve officers, mercenaries, police, and so forth, who lack similar training and expertise, from the profession.

According to Huntington, the nature of the military profession means that its members are largely isolated from the rest of society. For him, and for most other writers on civil-military relations, professionalism means a very sharp distinction between civilian and military, dividing the two into fundamentally separate and inherently conflictual groups. What keeps this conflict under control is military subordination to civilian rule. Huntington further argues that there are two types of civilian control: subjective control and objective control. Subjective control is a way of maximizing civilian control either by social class (Junkers, Samurai), by government institution (such as supervision by parliament), or by constitutional means. As van Doorn has argued, subjective control usually implies political indoctrination. In other words, getting the military to share the norms and values of the civilian elite.¹⁷ The problem with this form of civilian control, according to Huntington, is that civilians are not a cohesive group; therefore, maximizing civilian control usually means maximizing one group's control over the military at the expense of others.

To Huntington a much better means is objective control over the military which arises from recognizing the autonomy of the military as a profession. By letting the military professionals be military professionals, control is achieved because

¹⁵Ibid., p. 15.

¹⁶Ibid., pp. 16-17.

¹⁷See Jacques van Doorn, "Political Change and the Control of the Military," in *The Military Profession and Military Regimes*, Jacques van Doorn, ed. (Paris: Mouton, 1969). David Albright makes a similar point when he states that subjective control "relies on a shared outlook and common modes of thought" between civilians and the military. David E. Albright, "A Comparative Conceptualization of Civil-Military Relations," *World Politics*, Vol. 32, No. 4 (July 1980), p. 554.

the military has control over its own institution and is by nature the loyal servant of the state. Its professional responsibility does not make it loyal to any individual or group in society. Subjective control, by contrast, injects the military into politics by embroiling it in competition among civilian groups.

In the Chinese case, of course, the military cannot be truly apolitical. In Leninist regimes the military must be subordinate and loyal to the Party. A truly autonomous military that is loyal to the state would go against Leninist organizing principles.¹⁸ Jencks therefore modifies Huntington's original conception by arguing that rather than becoming apolitical the trend of professionalization in China is toward "political quiescence," meaning that professional officers seek to withdraw from politics and concentrate on military affairs while accepting the principle of civilian rule, reinforced by political indoctrination and other party controls. In other words, in China and other Leninist regimes, civilian control is subjective rather than objective and this is made manageable by the common values held within the Communist Party by military and civilian elites.

Jencks and Joffe admit that not all PLA officers are professional and that many of the revolutionary war veterans were highly political, but they also assert that the trend is toward professionalism as the Chinese military becomes more modernized. That is, as the PLA becomes more professional it will seek greater autonomy in institutional affairs and become less politically active, though never to the point that it becomes separate from the Party. Jencks presses the link between professionalization and modernization quite strongly, arguing (based partly on Kolkowicz's work on the Soviet armed forces)¹⁹ that just as technology produced military professionals in the Soviet Union, so it would in China.²⁰ As with Huntington above, the authors agree that the demands of modern warfare are universal in their nature, producing the need for the same kind of military organization, training, and outlook regardless of political

¹⁸Amos Perlmutter and William M. LeoGrande, "The Party in Uniform: Toward a Theory of Civil-Military Relations in Communist Political Systems," *American Political Science Review*, Vol. 76, No. 4 (December 1982), pp. 778-789.

¹⁹Roman Kolkowicz, *The Soviet Military and the Communist Party* (Princeton: Princeton University Press, 1967). Roman Kolkowicz argues that the Soviet military has become increasingly professionalized since its creation and that a typical military ethos developed, marked by elitism and detachment from society much as in Huntington's original model. In turn the military began to feel that the political officer was a threat to this military ethos. The Soviet military was viewed as seeking professional autonomy, putting it at odds with the Party, which sought a military that was politicized and firmly under its control, "the Party controls the gun" in other words. It does this by political indoctrination and using commissars and secret police to monitor the activities of officers (i.e., subjective control). The military, for its part, has its own interests and seeks to protect those interests and its own autonomy, resenting the interference of the party. Kolkowicz sees the military in the Soviet Union as being a cohesive unit separate and quite distinct from civilian elites and their relationship as being essentially conflict prone.

²⁰Jencks, *Muskets to Missiles*, pp. 25-31.

system. China needed a military capable of meeting the needs of modern high-tech warfare and this would create the conditions for a professional military elite to emerge. Jencks' argument, therefore, is highly teleological, linking military modernization with professionalism in a linear fashion.

How useful have the factionalism and professionalism models been in helping us to understand civil-military relations in China? There are several reasons why the field army hypothesis and other factional models are worth considering. First and foremost is the obvious fact that personalistic ties (*guanxi*) are pervasive in Chinese society. There are a number of studies on personalistic politics and factions in China. Lucien Pye, Lowell Dittmer, Andrew Nathan, Tang Tsou, and several other scholars²¹ have provided extensive discussion on the role of factions in Chinese politics and almost everyone agrees that personalism continues to exist. Michael Swaine has provided considerable evidence that even in the 1990s, the PLA high command remained highly personalized.²² Moreover, fear of factional activity has been a consistent theme within the Chinese political system, lending further credence to the factional approach. The real question is, how much of what we see can be explained by these factions?

A second argument in support of the salience of factional models notes that factionalism has been a feature in the civil-military relations of many other countries and, therefore, there is no a priori reason for not considering a factional approach to Chinese civil-military relations as well.²³

Third, before the 1980s both military units and military personnel remained in the same areas for decades, strengthening the notion that the field army elites

²¹There are many studies of factions in PRC politics. For a general overview and to see how perceptions of the problem have evolved, see Andrew J. Nathan, "A Factionalism Model for CCP Politics," *China Quarterly*, No. 53 (January/March 1973), pp. 34–66; Tang Tsou, "Prolegomenon to the Study of Informal Groups in CCP Politics," *China Quarterly*, 65 (January 1976), pp. 98–114; Franz Schurman, *Ideology and Organization in Communist China*, 2nd ed. (Berkeley: University of California Press, 1966); Frederick C. Tiewes, *Politics and Purges in China* (Armonck: M. E. Sharpe, 1990); David Lampton, *Paths to Power: Elite Mobility in Contemporary China* (Ann Arbor: University of Michigan, 1989); Lowell Dittmer, Yu-shan Wu, and Jonas Pontusson, "The Modernization of Factionalism in Chinese Politics," *World Politics*, Vol. 47, No. 4 (July 1995), pp. 467–495; and Lucien Pye, *The Dynamics of Factions and Consensus in Chinese Politics: A Model and Some Propositions* (Santa Monica: RAND, 1980).

²²Michael D. Swaine, *The Military & Political Succession In China: Leadership, Institutions, Beliefs* (Santa Monica: RAND, 1992).

²³Factional analyses are especially common in Southeast Asian and Middle Eastern civil-military relations. On Thailand see, for example, Chaianan Samuwanit, *The Thai Young Turks* (Singapore: Institute of Southeast Asian Studies, 1982). For a good summary of studies on personalistic ties and civil-military relations in the Middle East see Fuad I. Khuri, "The Study of Civil-Military Relations in Modernizing Societies in the Middle East: A Critical Assessment," in Roman Kolkowicz and Andrei Korbonski, eds., *Soldiers, Peasants, and Bureaucrats: Civil-Military Relations in Communist and Modernizing Societies* (London: George Allen and Unwin, 1982), pp. 9–27.

remained cohesive groups over time. Rotations in command, a common practice in many armies, were extremely rare in the PLA during the Maoist years. Most officers spent their entire careers in the same unit and units were seldom moved around the country. A classic example is Xu Shiyu, who remained commander of the Nanjing Military Region for 27 years. Li Desheng was associated with the Shenyang Military Region for over 12 years. As most of the top PLA commanders in the 1980s began their careers in the 1930s, we see cases of PLA leaders serving together for decades, during which time it was assumed that extremely tight bonds were formed between them.²⁴ Presumably these factions were reinforced through recruitment of new members to the factions, as responsibility for promotion depended in part on patronage of those at the upper levels of the military regions.

However, factional models in general and the field army thesis in particular proved rather unsatisfactory in trying to analyze civil-military relations in the period 1979 to 1989. To begin with, it is extremely difficult to link factions with specific policies. In part, this is because we simply lack sufficient information on decisionmaking to know precisely how key groups and individuals behaved. But it is also the case that these factions are clearly not interest groups with specific policy agendas.²⁵ The case simply cannot be made that, say, officers who served in the Third Field Army believe in rapprochement with the Soviets or that former members of the Second Field Army were more in favor of the reintroduction of ranks than other factions.

Nor were these groupings a good predictor of actual behavior.²⁶ In many cases individuals did not side with their alleged factions. Wei Guoqing, for example, was a member of the Second Field Army yet he opposed many of the economic, military, and social reforms associated with fellow Second Field Army veteran Deng Xiaoping.²⁷ As Monte Bullard has argued, organizational interests can cause a "conservative" factional member to be very "liberal" on some issues and vice versa.²⁸ In other cases, issues are supported across the old field armies. Supporters of military modernization in the 1950s can be found among

²⁴June Dreyer cites a Western diplomat as stating that Third Field Army connections were still very strong in the 1990s. See June Teufel Dreyer, "The New Officer Corps: Implications for the Future," *China Quarterly*, No. 146 (June 1996), p. 329.

²⁵William Pang-yu Ting, "Coalitional Behavior Among the Chinese Military Elite: A Nonrecursive, Simultaneous Equations, and Multiplicative Causal Model," *American Political Science Review*, No. 73 (June 1979), p. 493.

²⁶Both Parish and Ting came to the conclusion there was no clear link between field armies and political behavior. See Parish, "Factions," and Ting, *ibid*.

²⁷See June Teufel Dreyer, "Civil-Military Relations in the People's Republic of China," *Comparative Strategy*, Vol. 5, No. 1 (1985), pp. 27-49.

²⁸Monte R. Bullard, *China's Political-Military Evolution: The Party and the Military in the PRC, 1960-1984* (Boulder: Westview Press, 1985), p. 11.

members of all the old field armies. Even Lin Biao supported some military modernization.

Thus, was Deng able to initiate military reform in the 1980s because of support from members of his old Second Field Army or because of support from officers desiring modernization irrespective of their personalistic affiliations? Political outcomes attributed to factional behavior can just as easily be explained by other means, as Parish's classic critique points out.²⁹ There is no credible evidence that members of other field armies were opposed to modernization purely on a factional basis. There certainly are non-factional reasons for supporting military modernization, for example, combat experience in Korean, Sino-Indian border, and the 1979 Vietnam conflicts. In fact, we now know that interest in modernization can be found across the field armies, as well as resistance to change. William Ting's 1979 attempt to mathematically model factional behavior in the PLA³⁰ anticipated this observation. As factions are officially banned in China, they are far more informal and fluid than in more open political systems, thus creating more opportunity for cross-factional alliances. That is, individuals and groups should cross factional boundaries in pursuit of goals of common interest.

This leads to a second problem with factional analysis. It disaggregates the military into distinct units and for this reason fails to focus on issues of common interest. This is important because there are many factors which promote corporate identity and interests in the PLA. The greater the extent of corporate identity and interests, the less room for factionalism and the more the nature of civil-military relations changes. For example, security issues such as the Soviet threat, the status of Taiwan, and the 1979 invasion of Vietnam unite the PLA around its primary mission of national defense. How to deal with these threats more effectively becomes an issue which transcends domestic factional concerns and gives most of the PLA a stake in supporting military reform and modernization. Some scholars in the 1980s, following the logic of factions, argued that "Maoists" in the PLA made alliances with Party conservatives to block reforms. As Bullard and O'Dowd correctly argue, however, this ignores the PLA's obvious interests in change. Most of the PLA supported reform because it was in their corporate interest to do so.³¹ This is not to argue that factions were not a factor at all. Alastair Johnston has argued

²⁹Parish, "Factions." His point has been repeated many times since. Jencks and Joffe explain support for Deng's policies primarily on the basis of military modernizers, not factions. See Joffe, *Chinese Military*.

³⁰Ting, "Coalitional Behavior," p. 493.

³¹Monte R. Bullard and Edward C. O'Dowd, "The Role of the PLA in the Post-Mao Era," *Asian Survey*, Vol. 26, No. 6 (June 1986), pp. 706-720.

that the rectification campaign of 1979 through 1984 was in part aimed at reducing opposition to reform in the PLA though he does admit that resistance to reform during this period was a losing cause.³² What this suggests is that focusing on factions is revealing only part of the story and perhaps not even the most important part.

A third problem with factional approaches, especially the field army thesis, is that they are overly static. The field armies were formed before 1949. If nothing else, death and retirement were thinning out the ranks by the 1980s. Younger officers may be recruited into these factions, but they were recruited under different circumstances and therefore there is no reason to believe that their bonds will be as tight as those of the original members. This leaves the door open to other possible factions, with personalistic ties becoming more important. Overemphasis on field army loyalties initially blinded observers to the possibility of new personal associations emerging, though this oversight has since been addressed in the post-1989 literature.

Even more important, the static nature of the field army hypothesis diverts attention away from change. The field army thesis and other factional models are essentially a product of the Maoist period and the factional politics of the Cultural Revolution. Thus many of the basic assumptions in this kind of approach to civil-military relations are based on a political context rather different from the one that emerged in the 1980s. The dominant characteristic of Chinese politics over the past 20 years is change, but as Bullard noted, methodological approaches based on factions cannot explain change or offer predictions.³³ Too often, such analyses took factions as a given. Too little thought was given as to what conditions would encourage or discourage factional behavior and what developments could and would restrict and curtail factional behavior. This omission is glaring in the context of the 1980s because many of the military reforms launched in this period should have reduced the level of personalistic politics. These measures included, but are not limited to: mandatory retirement ages for officers, the beginning of a system rotation among regional commands, the reintroduction of military academies, the introduction of a military service law and other regulations, the reintroduction of a system of ranks, and promotion based on merit and technical accomplishments.

³²Alastair I. Johnston, "Party Rectification in the People's Liberation Army, 1983-87," *China Quarterly*, No. 112 (December 1987), pp. 591-630.

³³Bullard, *Political-Military Evolution*, p. 6.

There is one final problem with stressing personalistic and factional ties. The literature on civil-military relations in Southeast Asia, the Middle East, and Latin America (especially nineteenth century Latin America) abounds with studies on factions, personal cliques, cabals, and the like. Yet outside of Chinese studies, factionalism and personalistic politics are often associated with frequent military coups.³⁴ This is clearly not the case with China and is further evidence that factional analyses are providing only part of the explanation.

I do not wish to argue that factions and personalistic politics are not a factor in China; clearly that is not the case. Nor do I want to argue that they should not be considered in analyzing the PLA. My point is that the field army and other factional models represent a seriously flawed approach to understanding civil-military relations in the 1980s. Factional politics represents only one aspect of civil-military relations, and does not sufficiently take into account political and organizational changes taking place at this time. Factional analyses are most valuable when looking at periods of very low institutionalization and high levels of political uncertainty. The field army approach does not offer a superior explanation for why Deng initiated military reform or how he was able to implement those policies, though the existence of personal ties may have made implementation easier. Factional analysis is also a poor guide in trying to anticipate the likely impact of military reforms on civil-military reforms, as it is ill suited to analyzing important and fundamental changes in the system. In this regard, the professionalism model is far more useful as an analytical and theoretical tool.

Many aspects of the professionalization approach proved to be an accurate indicator of how civil-military relations developed in China in the decade prior to Tiananmen. The leadership that centered on Deng Xiaoping had as its goal a stronger, more economically developed China. They were interested in modernization, better expertise, skill and education in cadres, more regularization and legalization of the political system, trade, and political stability. They knew that China needed a more modern military to meet its security needs, to protect increasingly important trade, to take advantage of new military technologies, and so forth. Professionalism, unlike factional analyses, predicts what sort of changes needs to take place to achieve military

³⁴On the early history of Latin American civil-military relations see Brian Loveman, *The Constitution of Tyranny: Regimes of Exception in Spanish America* (Pittsburgh: University of Pittsburgh Press, 1993); Frederick M. Nunn, *Yesterday's Soldiers: European Professionalism in South America* (Lincoln: University of Nebraska Press, 1983); and Frederick M. Nunn, *The Time of the Generals: Latin American Professional Militarism in World Perspective* (Lincoln: University of Nebraska Press, 1992). On factions and coups in the Middle East and Southeast Asia see footnote 23.

modernization and predicts the consequences of that modernization. That is, the military should become more withdrawn from political life and be more insistent on autonomy for its own affairs, restricting its influence to issues directly related to national security. Unlike factions, the professionalization model offers something concrete to measure: the degree to which military reforms conform to the expectations of the professionalization model. The model can also easily explain why the military supports reform.

Many of the developments in the Chinese military seem to bear out the assumptions made by Jencks, Joffe, and Godwin. To begin with, the 1980s saw a renewed emphasis on professional military education. The National Defense University (*Guofang Daxue*) was reopened in 1986 and many other military academies were established or revived during the 1980s. Officers were no longer recruited from the ranks as during the Cultural Revolution but were expected to be trained in military academies. Merit and technical skill became more important than ideology as criteria for promotion. Attempts to retire older officers led to a general trend toward lower age and better education among officers at all levels of the military hierarchy. Military officers spent less time studying political content and more time perfecting their military craft. Interestingly enough, this education included exposure to Western military theorists and their theories of professionalization. These new ideas were also introduced in the course of increased exchanges with Western military personnel. Deng and others also called for changes in the content of training, requiring, among other things, political officers to increase the amount of time spent acquiring professional, rather than political, skills.³⁵

Training became more important, reflecting changes in equipment, military doctrine, and the need to coordinate combined arms operations. Much of the writing on military professionalism carefully documents the increasingly larger military exercises and other improvements in training and their implications for instilling a professional ethos among the PLA officer corps.³⁶ Political work also changed, stressing the importance of being professionally qualified as well as revolutionary. Ideological models of virtue, such as Lei Feng, temporarily disappeared from the scene. Political commissars seemed to be moving more in the direction of becoming morale officers rather than indoctrinators. There was a clear trend toward the importance of expertise in the PLA in this decade.

³⁵See Deng Xiaoping, *Selected Works of Deng Xiaoping 1975–1982* (Beijing: Foreign Languages Press, 1984), pp. 27–38.

³⁶Virtually every essay and book worth reading on the PLA mentions these changes. An excellent example is Ellis Joffe, *Chinese Army*.

Another development of special importance was the reintroduction of ranks in 1988 (abolished in 1965),³⁷ regulations on promotion, and new uniforms. Ranks and regulations are obviously important in developing a hierarchy of professionals based on impersonal rules of merit.³⁸ The greater the degree to which officers are chosen on merit and expertise, the greater the ethos of professionalism, and the less important personalism becomes as an explanatory factor in military politics. New uniforms and military decorations have the effect of reinforcing the distinctiveness between military and civilian, reinforcing professional pride among military personnel, and helping to build a sense of corporate identity.

Just as important was the shedding of many of the PLA's non-military roles and apparent retreat from politics. In September of 1985, six of the nine military men on the Politburo resigned and the decade as a whole witnessed a reduction in the number of military personnel serving on the Central Committee as well as the Politburo. This change was particularly noteworthy, as the PLA had long been noted for having more officers in these bodies than the militaries of any other Communist regime. Even more dramatic was the separation of military and civilian personnel at the regional level. There is no longer an interlocking directorate at the regional level with Provincial First Secretaries serving as political commissars of military districts and military commanders serving on provincial party committees. This split between regional civilian and military elites was further enhanced by the beginning of a system of rotation among the military region commanders.

In addition to its political roles, the PLA shed many other non-military activities. The railway engineer troops were transferred over to civilian control in 1983. In 1985, the last of the Production and Construction Corps, the Xinjiang PCC, was also civilianized. Many internal security duties were turned over to the revived People's Armed Police, which had been partially formed from units transferred from the PLA.³⁹ While this was not a complete separation and the PLA continues to have some internal security role, it did mark a renewed emphasis on the primary duty of any professional armed force—national defense.

³⁷The PLA did not have a system of rank until 1955, when they adopted the Soviet system. This was abandoned in 1965 in favor of a return to the more egalitarian traditions of the revolutionary war period. The uniforms adopted in 1965 also minimized the differences between officers and enlisted personnel. The only obvious distinction between officers and enlisted before the 1980s was that officers had more pockets and were issued a sidearm.

³⁸See discussion of Huntington above.

³⁹The PAP was absorbed by the PLA in 1965. It has never been completely separated from the PLA.

In sum, there were many trends in the 1980s that tended to support the hypothesis that the PLA would become more professional. Furthermore, there was considerable evidence that these and other changes, such as force reductions and doctrinal change, could be implemented because many officers within the PLA supported these reforms from a professional standpoint. Those who stressed professionalism clearly got many things right. But in focusing on these positive developments, writers within the professionalism paradigm did not always look sufficiently at other issues and this led to errors in their analysis.

In looking at many developments leading to greater professionalization, scholars sometimes fell into the trap of overestimating the extent of reform actually achieved. For example, ranks were originally to be introduced in 1985. They were in fact not introduced until 1988. Many other structural reforms were also slow in being implemented. Of the 13 sections of military law promulgated in China since 1978, for example, 12 were not enacted until after 1988. In point of fact, most of the military laws and regulations currently in existence did not come into being until the 1990s.⁴⁰ While the PLA was becoming more professionalized, it still was a long way from being professional. Many gaps remained to be filled in.

A case in point was the long-term impact of PLA economic enterprises, which hurt efforts at regularization and training, encouraged officers to disobey superiors in order to hide profits, and most of all increased the degree of military corruption to new levels. All of these developments seriously undermined the process of professionalization,⁴¹ recommitting the PLA to a whole range of non-military activities at a time when it was shedding many of its other traditional non-military roles. In the long run, analysts such as Jencks, Godwin, and Cheung were correct in their predictions that the PLA would eventually shed many of its entrepreneurial activities.⁴² However, the task of getting the PLA out of business was far more problematic than was anticipated.

⁴⁰Thomas J. Bickford, "Regularization and the Chinese People's Liberation Army: An Assessment of Change," in *Asian Survey*, Vol. 40, No. 3, (May/June 2000).

⁴¹See, among others, James Mulvenon, "Military Corruption in China: A Conceptual Approach," *Problems of Post-Communism* (March/April 1998), pp. 12-21; Thomas J. Bickford, "The Chinese Military and Its Business Operations: The PLA as Entrepreneur," *Asian Survey*, Vol. 34, No. 5 (May 1994); and Tai Ming Cheung, "The Chinese Army's New Marching Orders: Winning on the Economic Battlefield," in Jorn Brommelhorster and John Frankenstein, eds., *Mixed Motives, Uncertain Outcomes* (Boulder, Colo.: Lynne Rienner, 1997), pp. 181-204.

⁴²See, for example, Harlan W. Jencks, "Organization and Administration in the PLA in the Year 2000," in Richard Yang, ed., *SCPS Yearbook on PLA Affairs: 1988/89* (Kaohsiung, Taiwan: SCPS, 1989), pp. 53-54.

The transition to a fully professionalized PLA (assuming it is ever fully realized) will take far longer than originally predicted.⁴³

Part of this can simply be explained as underestimating the amount of time it would require to overcome the damage of the Cultural Revolution. But there was also considerable resistance to many of the military reforms. While most of the PLA supported reform in principle, some felt threatened by changes and new standards and were in a position to block or slow down changes. Others had genuine ideological concerns about the long-term impact of some aspects of reform and/or were loath to see the ending of traditions they had helped create. PLA commercial activities, which grew rapidly in the 1980s, were a counter to professionalism. Yet commercial activities were accepted as legitimate in part because the PLA had a well-entrenched tradition of economic activity. The revolutionary elders as noted above dominated the leadership in the 1980s and this shaped which aspects of military reform were acceptable and which were not. Not all reforms were equally supported.

The case of China's parallel Central Military Commissions (CMC) is a good illustrative example. The Party's CMC has always been the organization directly responsible for running the PLA. When a state CMC was founded in 1982, it immediately attracted attention and speculation that this represented a major step in separating Party from state and, therefore, Party from army. In reality it was nothing of the kind. The state CMC has the exact same membership as the Party CMC with no separate existence except as a legal fiction. Nor, in hindsight, should there have been any expectation the case would be otherwise. Communist parties have always been very careful to maintain that the Party, not the state, controls the gun. To this end, the client of the military always must be the Party and only the Party. Putting the state CMC on the same level as the Party CMC would be a fundamental redefinition of the nature of the Party-state relationship in China. Such a redefinition would go against the beliefs of many of the top leadership within the People's Republic of China (PRC).⁴⁴ Whatever the real reasons behind the establishment of the state CMC,⁴⁵ a genuine separation of party and state was not acceptable to Deng and other elders who saw them as essentially identical.⁴⁶

⁴³See, for example, Ellis Joffe, "Party and Military in China: Professionalism in Command?" *Problems of Communism* (September/October 1983), pp. 48-63.

⁴⁴This of course may be changing, as will be argued further in the paper.

⁴⁵Shambaugh has suggested that it was at the instigation of Zhao Ziyang and/or his close associates who had read Huntington. See David Shambaugh, *Reforming the Chinese Military*, unpublished manuscript, p. 18.

⁴⁶Jeremy T. Paltiel, "PLA Allegiance on Parade: Civil-Military Relations in Transition," *The China Quarterly* (1995), p. 787.

Another analytical trap centered on the fact that the professionalization of the PLA is very much a political process. This is recognized by many writers on the subject, but their interpretations are open to dispute. Joffe argued that the PLA willingly accepted their subordination and that by 1985 the PLA was out of politics.⁴⁷ This is somewhat misleading and the actual situation was far more complex. Joffe and others are correct, for instance, in asserting that the PLA has withdrawn from many aspects of politics, but it has never withdrawn entirely. Reducing the number of Politburo members who are military men reduces the formal lines of influence, but informal ties remain. As Michael Swaine has demonstrated, retired elders were still able to exercise varying degrees of influence even after retirement.⁴⁸ The irony is that military reform left the higher levels of civil-military relations still very much political and personal. The real demarcation was at the lower levels of civil-military relations, where there is a more definitive split between civilian and military elites. This created the unusual situation of a split between the functioning of civil-military relations at the top and the grassroots levels.

Another problem relates to the nature of professional expertise. As the PLA becomes more professional it should withdraw from many non-military roles, in a process of de-politicization. Yet as the synopsis of Huntington above indicates, the expertise of the officer qualifies him (or her) to give advice on security and other related matters. In a Leninist regime, where military leaders are also Party members, this expertise could translate into the military seeking a greater political role in foreign policy and other areas close to its corporate interests. This possibility has received a lot of attention outside the China field.⁴⁹ Among PLA scholars, however, very little attention was paid to this possibility in the 1980s.⁵⁰

Finally, while it is easy to measure reforms that should encourage professionalism, actually measuring professionalism itself is rather difficult. All too often there is a tendency to assume that there was an automatic correlation between military modernization and professionalization. However, as Fang

⁴⁷Joffe, *Chinese Army*, p. 163.

⁴⁸Swaine, *Succession*, chapter one.

⁴⁹The most important work in this area is that of Abrahamsson,; ee Bengt Abrahamsson, *Military Professionalization and Power* (Beverly Hills, Calif.: Sage Publications, 1972). There are a large number of case studies in Latin America which argue that there is a connection between professionalization and political activity. See Alfred Stepan, *Rethinking Military Politics: Brazil and the Southern Cone* (Princeton: Princeton University Press, 1988); Nunn, *Yesterday's Soldiers*; Nunn, *Time of the Generals*; and Claude Welch, *No Farewell to Arms? Military Disengagement From Politics in Africa and Latin America* (Boulder: Westview Press, 1987).

⁵⁰An exception was Gerald Segal, "The Military as a Group in Chinese Politics," in David S. G. Goodman, ed., *Groups and Politics in the People's Republic of China* (Armonk: M. E. Sharpe, 1984).

Zhu has argued,⁵¹ it is possible to have military modernization without professionalization. Both Joffe and Jencks recognize that the PLA's officer corps is not entirely professional in outlook and have argued that what really matters is that most of the officer corps is professionally oriented. In his study of praetorianism, Perlmutter argued that only about 5 percent of an officer corps need be politicized in order for the military to behave in a praetorian manner.⁵² How many officers must be professional in order for the PLA to behave as a professional force? The longer the PLA remains a semi-professional force in transition, the more important this question becomes.

The Study of Civil-Military Relations and the Impact of the Tiananmen Demonstrations: 1989–1991

The 1989 Tiananmen demonstrations and their subsequent suppression were the biggest political crisis the Chinese regime has faced since the death of Mao. Moreover, the sense of threat was compounded by the collapse of Communist regimes throughout Europe that same year, culminating in the death by firing squad of Romanian Communist Party leader Nicolai Ceaucescu and his wife. Two years later the Soviet Union collapsed following a failed coup attempt in August 1991. Like these later crises, Tiananmen was a major test of military loyalty. The PLA's behavior during the crisis and the reactions of the Party, both to Tiananmen and to the collapse of communist rule elsewhere, offered an opportunity to test existing theories of civil-military relations in China.

Tiananmen produced a large volume of literature, perhaps the biggest single publishing boom on the PLA.⁵³ What does this literature tell us about the models we had been using in the 1980s? To a certain extent both sides can claim that Tiananmen vindicated their arguments. Factions were important in two key respects. First, factions were important in understanding how the Party came to the decision to use force. There was considerable maneuvering within the Party leadership that bypassed the official rules of decisionmaking and

⁵¹See Fang Zhu, *Gun Barrel Politics: Party-Army Relations in Mao's China* (Boulder: Westview Press, 1998).

⁵²Amos Perlmutter, *The Military and Politics in Modern Times: On Professionals, Praetorians, and Revolutionary Soldiers* (New Haven: Yale University Press, 1977), p. 103.

⁵³For a representative sampling of the literature see Harlan W. Jencks, "The Military in China," *Current History* (September 1989), pp. 265–268; Harlan W. Jencks, "Civil-Military Relations in China: Tiananmen and After," *Problems of Communism* (May/June 1991), pp. 14–29; Ellis Joffe, "The Tiananmen Crisis and the Politics of the PLA," in Richard Yang, ed., *China's Military: The PLA in 1990/91*; George Hicks, ed., *The Broken Mirror: China After Tiananmen* (London: Longman Current Affairs, 1990); Jane's Information Group, eds., *China in Crisis: The Role of the Military* (London: Jane's Defense Data, 1989); and Lee Feigon, *China Rising: The Meaning of Tiananmen* (Chicago: Ivan R. Dee, 1990).

eventually led to the dismissal of the nominal Party Chairman Zhao Ziyang. How Party elders, many of them former PLA leaders, lined up in favor of the crackdown mattered. Several "retired" PLA leaders were against a crackdown. Others, such as Peng Zhen, were strong proponents of the use of force. The role of Yang Shangkun and his brother Yang Baibing was apparently a key part of organizing the crackdown. Less clear was the degree of personal lobbying that Deng had to engage in to ensure the cooperation of PLA regional commanders. Some analysts have argued that there was evidence of factional loyalties in which units were involved in the crackdown and in which commanders received promotions in the years immediately following the massacre.⁵⁴ The return of a high degree of politicization (Lei Feng campaigns, military training for college students, etc.) after the crackdown tended to reinforce the impression that professionalism was on hold and that factionalism and a very political PLA had returned.

The second important point is that in the wake of Tiananmen it became obvious that Yang Shangkun and his brother Yang Baibing were building up a group of followers in the PLA.⁵⁵ The Yangs played a pivotal role in the crisis and, at least initially, appeared to be its primary beneficiaries, enjoying a considerable strengthening of their position within the Party-military hierarchy. An enormous amount of speculation, especially in the Hong Kong press, centered around evidence that the Yangs were bringing many of their supporters into key positions throughout the military. While the "Yang family village" did not last, it served to remind everyone that military reform had not fully eliminated personalistic politics. This gave rise to a new set of faction-based literature in the 1990s which emphasized the importance of personalistic politics during a crisis and the emergence of new forms of factional behavior.

The professionalism school also believed that Tiananmen tended to reinforce their interpretation of Chinese civil-military relations. The army did not split, as one would have expected if it were still as factionalized as in the 1960s.⁵⁶ By and large the PLA acted, however reluctantly, as a whole. The most discussed piece of evidence that might hint at factions within the military was the argument that the 27th Group Army carried out the actual massacre and it was loyal because it was commanded by a nephew of General Yang Shangkun. This argument does not hold up under empirical scrutiny. As Jencks and others

⁵⁴For examples of these arguments see June Teufel Dreyer, "Tiananmen and the PLA"; Gerald Segal, "The Chances of a Coup d'Etat," and "China's Party-Army Relations," Gerald Segal and John Phipps, "Why Communist Armies Defend Their Parties," all in Yang, ed., *China's Military*. See also Jane's Information Group, *China*, especially pp. 3-11 and pp. 71-101.

⁵⁵See especially Dreyer, "Tiananmen and the PLA."

⁵⁶Jencks, "Tiananmen and After," p. 16.

have shown, the crackdown involved more than just the 27th Group Army. Elements from many different units, including paratroops and even soldiers from the allegedly pro-democracy 38th Group Army, were involved.⁵⁷ While there was evidence of military dissent, only some of this could be attributed to factions. Instead, officers were reluctant to use force for a variety of reasons. Some had sons and daughters among the student demonstrators. Others were concerned about the negative impact on the PLA's image if force was used. There was fear that involvement might split the PLA as it had been during the Cultural Revolution. Many were said to have the distaste that all professional soldiers have about becoming involved in suppressing domestic unrest.⁵⁸

For advocates of the professionalism model, therefore, Tiananmen reinforced the notion of the PLA as professional in nature, at least in regard to obeying orders from the Party. Despite misgivings, the PLA acted as a whole and obeyed the orders to crack down on demonstrators. This underscores an essential point about the PLA. Throughout its history, its interventions in Chinese politics have always been at the behest of the Communist Party or at least the dominant group within the Communist Party. While the PLA has never threatened to replace the Party, it has helped decide what kind of communists are going to run the Party. Jencks noted that in this case especially the PLA obeyed orders on the basis of their "legality"⁵⁹ (the order was issued by Prime Minister Li Peng in line with Article 89 of the constitution),⁶⁰ and argued that the PLA was more professionalized than at any previous time in its history.

Yet the immediate impact of Tiananmen on the study of Chinese civil-military relations was not necessarily an endorsement of the professionalism approach. Though both Jencks and Joffe regarded Tiananmen as evidence of professionalism in that the PLA was obedient to civil authority, they were initially rather pessimistic about the impact on further professionalization of the PLA. Joffe felt that Tiananmen had inflicted considerable damage on the PLA's reputation and worried that further professionalization would be put on hold at a critical juncture in the PLA's modernization program.⁶¹ Jencks

⁵⁷Ibid., Jencks and Andrew Scobell, "Why the People's Army Fired on the People: The Chinese Military and Tiananmen," *Armed Forces and Society*, Vol. 18, No. 2 (Winter 1992), pp. 199-209.

⁵⁸For good discussions of PLA concerns about Tiananmen, see Joffe, "Tiananmen Crisis," pp. 20-22.

⁵⁹See Harlan W. Jencks, "Party Authority and Military Power: Communist China's Continuing Crisis," *Issues and Studies* (July 1990), pp. 11-39, and Jencks, "Tiananmen and After." Jencks notes that while the order was technically "legal," the process by which that decision was made did not follow the Party's legal norms and that not all within the PLA were happy with the "legality" of the order.

⁶⁰Dreyer, "Tiananmen and the PLA," p. 37.

⁶¹Joffe, "Tiananmen Crisis."

worried that Tiananmen had undone much of what Deng had tried to achieve in the 1980s.⁶² Not only had Deng overturned much of the institutionalization that he had tried to create, Tiananmen and the collapse of communism in East Europe was followed by an intense re-politicization campaign aimed at asserting the Party's control of the "gun." Political indoctrination was dramatically stepped up, Lei Feng came back, and PLA membership in the Central Committee and Politburo increased. Many younger officers were known to be frustrated with the situation leading some analysts to argue that while the PLA had been professional and obeyed orders, they might not the next time.⁶³ This is not to say that the writers on professionalization doubted their model, but they were keenly aware that the prospects for a continued trend in the direction of professionalization were by no means guaranteed.

Overall, the literature on civil-military relations from 1989 to 1991 is dominated by doubts about where the PLA might be going. Many speculated that the PLA was very much back in politics and might not go back to the barracks quietly.⁶⁴ There was some speculation about a possible "Polish scenario" in which the PLA might take over leadership of the Party in the event of the failure of civilian leaders.⁶⁵ Several writers argued that while the PLA obeyed the CCP this should not be attributed to professionalism but to the PLA's role as guardian or armed wing of the Party. Dreyer noted that in many respects, the PLA did not fit Western concepts of professionalism,⁶⁶ and Latham argued that studying professionalism and PLA loyalty were false issues.⁶⁷ Eberhard Sandschneider⁶⁸ argued that the massacre should have come as no surprise, since the PLA has always been the armed wing of the Party. He further argued that the aftermath of the Tiananmen demonstrations would be the reversal of institutionalization of the PLA and a return to the politicization that characterized it in the 1960s and 1970s. He did not agree with the professionalization thesis and felt the decline of overt representation of the PLA in party decisionmaking was less a sign of professionalization than that younger military elites felt too much direct

⁶²Harlan W. Jencks, "China's Army, China's Future," in David Goodman and Gerald Segal, eds., *China in the Nineties: Crisis Management and Beyond* (Oxford, Clarendon Press, 1991); and Jencks, "Tiananmen and After."

⁶³Scobell, "Chinese Military," p. 207.

⁶⁴See Dreyer, "The PLA and the Power Struggle," *Problems of Communism* (September/October 1989), p. 46.

⁶⁵Jencks, "Party Authority," p. 38; Scobell, "Why the People's Army Fired On the People," p. 207.

⁶⁶Dreyer, "Tiananmen and the PLA," p. 37.

⁶⁷Richard J. Latham, "China's Party-Army Relations After June 1989: A Case of Miles' Law?" in Yang, ed., *China's Military*, pp. 117-118.

⁶⁸Eberhard Sandschneider, "The Chinese Army After Tiananmen," *The Pacific Review*, Vol. 3, No. 2 (1990), pp. 113-123.

participation in politics had hurt the military. In response, a slight withdrawal was in order, but only in return for concessions. In other words, the military bargained for its quiescence and was therefore still political. In time, much of this pessimism has faded and discussions of Tiananmen are now more measured. But the questions raised by the incident remain and help shape the way the civil-military literature has developed since 1991.

In sum, Tiananmen represents a dividing line in how we think about civil-military relations in China. It shook confidence in the apparent long-term trend toward professionalization and raised many new questions about the future of Chinese civil-military relations. After Tiananmen, the study of civil-military relations became much more absorbed with the problem of the military's role in a post-Deng succession. Would the PLA become a "kingmaker" when Deng died? If so, would the military be united or would it be split? What factions might be important in the succession? Would the long-term impact of Tiananmen be a more politicized PLA? Or would trends toward greater professionalization continue? Was it possible for the PLA to be both political and professional? What would happen when the last of the revolutionary generation left the scene?

The Study of Civil-Military Relations: 1992–Present

In the aftermath of Tiananmen there is a greater diversity of opinion on how to approach Chinese civil-military relations. Some scholars have focused on the top of the military and Party hierarchy, where politics remains highly personalized. Others have continued to argue that professionalism still offers the best framework for thinking about Chinese civil-military relations. Still others have argued for a "symbiotic" framework as an alternative to professionalism. Finally, some PLA scholars are now suggesting that new patterns in civil-military relations are emerging in the post-Deng era.

Factional Analysis in the 1990s

The role of factions has continued to be a point of debate since Tiananmen, though the terms of that debate have shifted in many important ways since the 1980s. There is little discussion of factionalism at the regional level, reflecting a growing consensus that promotions, regular rotations, and other policies have largely reduced the basis for regional factions.⁶⁹ Current discussions of

⁶⁹In 1989, less than 15 percent of officers at the Military Region level served in their native areas. Rotations now take place every three years. See June Teufel Dreyer, "The Military's

personalistic politics focus almost exclusively on the highest echelons of the PLA. Few Western scholars continue to discuss field armies, though the subject remains popular with observers in Mainland China, Hong Kong, and Taiwan. In place of field armies, scholars have discussed factions based on followers of the Yangs, provincial origins, even school ties. Most important, perhaps, in the 1990s factions are seldom regarded as a primary causal explanation in civil-military relations. They are considered of importance in promotion⁷⁰ or "latent personnel relationships" that matter during a time of crisis such as an uncertain succession.⁷¹

The most extensive and ambitious attempt to look at factions in the post-Tiananmen era is in the work of Michael Swaine.⁷² Unlike many of his predecessors, his approach has tried to identify those factors in the Chinese political system that encourage and sustain personalistic politics. These include the absence of an institutionalized structure to determine leadership succession, an unstable domestic environment with high levels of social and economic discontent, and uncertainty about the transition from the remaining elders of the revolution to a much younger generation that is more specialized and lacks the breadth and experience of their predecessors. Under such conditions leaders in the Party can maintain their positions only by having networks of support within the military, and military personnel can really influence decisionmaking only by maintaining ties with civilians. It is important to stress here that Swaine feels that these factions are most important during times of crisis, when political and military leaders rely heavily on those personal ties that they can trust.⁷³ One important aspect of Swaine's study, and perhaps his most useful contribution, is the evidence he presents about the high degree of control exerted by a few individuals over the military. Only Deng or his personal representative could give certain orders, and military commanders are highly restricted as to how many troops may be moved without permission from the center.⁷⁴ This has provided us with a much better understanding of the highly personalized nature of politics at the top of the

Uncertain Politics," *Current History* (September 1996); and James C. Mulvenon, *Professionalization of the Senior Chinese Officer Corps: Trends and Implications* (Santa Monica: RAND, 1997).

⁷⁰June Teufel Dreyer, "New Officer Corps," p. 330.

⁷¹Cheng Li and Lynn White, "The Army in the Succession of Deng Xiaoping," *Asian Survey*, Vol. XXXIII, No. 8 (August 1993), p. 760.

⁷²Swaine, *Succession*, especially chapters 2 through 5.

⁷³Swaine, *Succession*, chapter one.

⁷⁴Swaine, *Succession*, chapter six. A corps commander can only move a regiment, a division commander a battalion, a regimental commander a company and a battalion commander a platoon.

politico-military command, as well as giving us a better appreciation of how control can be maintained in such a highly personalized system.

A different approach to understanding how personal ties might affect the post-Deng succession was proposed by Li Cheng and Lynn White, who predicted that as the process of modernization proceeds and Chinese elites become more technocratic,⁷⁵ school ties will become more important as a basis of personal ties and the field armies will become less important as a source of factional behavior.⁷⁶ There is a certain irony here in that Li and White are looking for evidence of affective ties based on military education, a product of the professionalization of the 1980s. In the end they provided some very good evidence that the officer corps was becoming better educated and professionalized, but were much less successful in demonstrating that a by-product of officer education was a new form of personal ties. It is not that the logic was faulty. Educational ties have been shown to matter in other developing countries. The problem is that it is not clear whether educational cliques have an impact outside promotion.⁷⁷

In the end, these and less well articulated discussions on factions and the post-Deng succession were largely moot, as Jiang's succession was relatively uneventful. The proposition that personalistic alliances might become very important in the event of another crisis remains untested. The post-Deng succession went smoothly in part because the PLA is loyal to the Party and there was no obvious alternative. But writings on Jiang's succession also indicate that Jiang's "courtship" of the PLA was an important aspect of his consolidation of power.⁷⁸ This tends to reinforce Swaine's central contention that the uppermost levels of decisionmaking civil-military relations remain highly personalized and even members of the professionalism school accept this argument.⁷⁹ This serves to remind us that though there has been a transition to a post-revolutionary elite, the Chinese political system is not yet sufficiently institutionalized to end personalistic politics.⁸⁰

⁷⁵For a slightly different approach to professionalism, technocracy, and the persistence of personalism see Xiaowei Zang, "Professionalism and the Leadership Transition in the Post-Mao Chinese Army," *Journal of Northeast Asian Studies*, Vol. X, No. 3 (Fall 1991), pp. 46-60.

⁷⁶Li and White, "Army and Succession", p. 761.

⁷⁷Dreyer, "New Officer Corps," p. 330.

⁷⁸See especially David Shambaugh, "China's Commander-in-Chief: Jiang Zemin and the PLA"; June Teufel Dreyer, "Domestic Implications of an Emerging PLA"; both in C. Dennison Lane, Mark Weisenbloom, and Dimon Liu, eds., *Chinese Military Modernization* (London: Kegan Paul International, 1996), pp. 209-245. Shambaugh's treatment is the more extensive.

⁷⁹Ellis Joffe, "Party-Army Relations in China: Retrospect and Prospect," *China Quarterly*, No. 146 (June 1996), p. 300.

⁸⁰On the lack of institutionalization in general see Avery Goldstein, "Trends in the Study of Political Elites and Institutions in China," *The China Quarterly*, No. 139 (September 1994).

That said, assessing the role of factions in the 1990s remains highly problematic. All the limitations on factional approaches discussed in the first section remain valid, especially in terms of linking perceived groups to causation. The "Shandong Faction" represents a case in point. Officers from Shandong province are very prominent in the upper levels of the PLA. In 1994 both the People's Liberation Army Navy (PLAN) commander and the political commissar were from Shandong, as were one-third of the CMC's membership.⁸¹ Overall, Shandonnese make up about a quarter of PLA senior officers.⁸² It may very well be that this "faction" has an impact on promotion and other decisions within the PLA. It also may be the case that the high proportion of Shandonnese simply reflects where the PLA did much of its recruiting in the late-1940s and early-1950s.⁸³ The literature is also divided on the Yangs, with some scholars arguing that the end of the "Yang family village" increased factionalism at the top. Others argue that the Yangs inadvertently helped restrict the role of factions.⁸⁴ Factions exist in Chinese politics, but how we should think about them in civil-military relations remains a point of contention. Perhaps the only thing that can be said with any certainty is that personalism remains and its persistence allows us to measure the limits of institutionalization within the Chinese political system.

Professionalism After 1992

For those writing within the professionalism paradigm, the essential arguments remain largely unchanged. They continue to view the PLA as a basically professional force within a Leninist state, with few substantively new ideas in the professionalization literature of the 1990s. As both the 1991 Gulf War and the recent NATO bombing of Yugoslavia aptly demonstrate, China's security lies in developing a modern, technically proficient force. Therefore, China will need to continue to upgrade the skill and expertise of its officer corps, thereby strengthening the trend toward professionalization. The political campaigns that followed Tiananmen have subsided and are now viewed as a temporary manifestation of the normal tensions between a professional force and the

⁸¹ Dreyer, ed., *China's Strategic View*, pp. 4-5.

⁸² Mulvenon, *Professionalization*, pp. 51-54; and Li and White, "Army and Succession," pp. 760-761. Li and White note that many of the Shandong officers come from the county of Rongcheng.

⁸³ See Mulvenon, *Professionalization*, pp. 51-54; and Li and White, "Army and Succession," p. 760.

⁸⁴ Dreyer says factions are more likely. Dreyer, "Domestic Implications," p. 203. Joffe argues that the end of the Yangs was made easier because professional officers opposed factions. Joffe, "Party-Army," p. 306. Shambaugh says both, Shambaugh, "China's Commander," p. 223.

Party's desire to maintain control, a process that goes back to the 1950s.⁸⁵ The transition to a post-revolutionary elite should, in theory, further encourage trends toward professionalism. For the first time there will be distinct civilian and military elites. Unlike their predecessors, the new military elite ought to be more inwardly oriented toward professional concerns and less involved in political matters.⁸⁶ Barring a major conflict among civilian elites, the PLA should become even more like the Soviet military, which many observers regard as highly professional.⁸⁷

Much of the writings that come under this category between 1992 and 1998 largely consist of new evidence that the PLA is acquiring more of the aspects of a professional force and in many respects is more professional now than in the 1980s. Reflecting vastly improved sources of information and some path-breaking work in statistical analysis, a number of studies have been published in the last few years on officer education that indicate a trend toward greater professionalization.⁸⁸ It is not just that the data indicate that officers are better educated than before. The data also indicate that the content of that education has also changed, emphasizing technical knowledge and military theory over ideological issues.⁸⁹ Technical specialization is increasing within the PLA.⁹⁰ Contacts with foreign militaries and exposure to the professional norms of Western armies have steadily increased.

Trends in officer education are reinforced by other developments in the 1990s. Since Tiananmen, the pace of regularization has picked up. Twelve of the thirteen sections of military law were enacted in just the past ten years. The year 1999 saw major steps toward greater regularization with the introduction of new combat regulations, as well as changes in logistics, military education, and training.⁹¹ Studies of promotions indicate that professional qualifications are more important than ever.⁹² The retirement system too seems to be more

⁸⁵See Kolkowicz, *The Soviet Military*; and Joffe, *Party and Army*.

⁸⁶Joffe, "Party-Army," p. 310.

⁸⁷Perlmutter, *Military and Politics*, pp. 229–250. In this earlier work, Perlmutter offered a tripartite scheme of professional, praetorian, and professional revolutionary armies, the last category consisting of national liberation-type movements of which China and Israel are the two examples given.

⁸⁸See, among others, Lonnie Henley, "Officer Education in the Chinese PLA," *Problems of Communism* (May/June 1987), pp. 55–71; Dreyer, "New Officer Corps"; Mulvenon, *Professionalization*.

⁸⁹Mulvenon, *Professionalization*, pp. 11–24.

⁹⁰Mulvenon, *Professionalization*, pp. 25–34. Not only are there separate career tracks for military officers and commissars, it is now the norm to serve in the same service arm for their entire careers. In the 1970s it was not unusual, for example, to see a political commissar transfer from the infantry to the navy.

⁹¹See the chapters by Paul Godwin and David Finkelstein in this volume.

⁹²Li and White, "Army and Succession."

effective than in the 1980s when it was first introduced.⁹³ The trend toward a reduction in domestic affairs (except commercial activity) increased through most of the decade. Whereas there were many at the beginning of the 1980s who claimed that the PLA was involved in making domestic policy, few would make that argument now.⁹⁴ The preponderance of the empirical data presented in the literature of the mid- to late-1990s indicate an irreversible trend toward a more professional officer corps. Perhaps the best indication of the strength of the evidence is that virtually all scholars writing on the PLA now acknowledge that at least some professionalism has taken place since the 1980s.

It is, therefore, rather ironic that at a time when the evidence for the arguments of Joffe and Jencks is stronger than ever, there should also be a considerable body of evidence that runs counter to those arguments. Two areas stand out: commercial activity by PLA-owned enterprises and growing evidence that the PLA is increasingly active in the foreign policy arena. The existence of PLA enterprises was a result of historical legacies. The decision to use them to generate funds for the PLA was in part because historical and ideological legacies meant both PLA and civilian Party leaders felt they were legitimate. Historical legacies still affect the PLA despite two decades of growing professionalism. PLA enterprises became highly dysfunctional in part because of social, political, and economic forces that are outside the military. Thus, PLA commercial activities have had an extremely negative impact on the PLA and even though the PLA was ordered to divest itself of these enterprises in July 1998, it will be years before the damage is repaired.⁹⁵

The point I want to make here is that the issue is not just the damage that PLA commercial activity has done to the military. Jencks and Joffe are well aware of the extent to which "PLA Inc." undermined professionalism. But professionalism focuses attention as much on what is happening inside the military itself as it does on the issue of civilian control. This is often a weakness of the approach because there are often many social, political, and economic developments in the society as a whole that can affect professionalism. Officers may be *distinct* from citizens, but the military is seldom truly *separate* from society.

PLA commercial activity is not just about the military being involved in the economy. It is also about bringing the larger society into the PLA, exposing

⁹³Mulvenon, *Professionalization*, pp. 33–43.

⁹⁴David Shambaugh, "China's Military in Transition," *The China Quarterly*, No. 146 (June 1996), p. 272.

⁹⁵See footnote 42.

officers and enlisted personnel to a whole range of norms and values that are at odds with professional norms and the political message of the Communist Party.⁹⁶ By focusing on the military itself and not the military's relationship to the entire political system, analysts may be missing trends that may help or hinder professionalization. Given the enormous amount of change going on in China, this is an important omission in how we think about civil-military relations. Those using the professional approach need to think more about how the developments in society may impact the PLA.

Turning to national security policy, there is increasing evidence of a substantial military role in this policy area.⁹⁷ This stands in remarkable contrast to the past, when there was little evidence to suggest that the PLA had any role in foreign policy.⁹⁸ Not only has the passing of the old revolutionary elite meant a new political role in national security policy, available evidence indicates that the PLA's involvement is growing.⁹⁹ The emergence of a new generation of separate civilian and military elites helps make this possible. Not only do the new civilian elites lack the stature and military experience to set security policy, new military elites are more expert and have a stronger sense of the PLA's corporate interests in security policy. To a certain extent this does not pose a problem for the professionalism argument. As the synopsis of Huntington at the beginning of this paper shows, one of the responsibilities of a professional officer is advice on defense-related issues. The problems start when generals start giving more than advice. That opens the door to bargaining, coalitional behavior between the PLA and civilian groups, political influence, perhaps even directives to civilians by military personnel. All these types of behavior pose problems for the image of a politically quiescent PLA. It may very well be that professionalization of the PLA will lead to a narrowing of the PLA's political role, but with the countervailing effect of intensifying the PLA's political influence in those areas that it remains active.

⁹⁶To give an anecdotal example, one general used the extra earnings gleaned by his unit's enterprise to send his daughter to private school in England. I would submit that an officer using extra-military earnings for private family advantage is not only inconsistent with professional norms, it is also highly inconsistent with Marxism. The general reportedly felt that divestiture was very unfair to him. See Susan V. Lawrence and Bruce Gilley, "Bitter Harvest," in *The Far Eastern Economic Review*, April 29, 1999.

⁹⁷For studies on how the PLA affects foreign policy see Michael D. Swaine, *The Role of the Chinese Military in National Security Policymaking* (Santa Monica: RAND, 1996); Michael D. Swaine, "The PLA in China's National Security Policy: Leaderships, Structures, Processes," *The China Quarterly*, No. 146 (June 1996); and John W. Garver, "The PLA an Interest Group in Chinese Foreign Policy," in Lane, Weisenbloom, and Liu, *Chinese Military*, pp. 246-281.

⁹⁸See footnote 51.

⁹⁹See Swaine, *National Security Policymaking*.

In sum, while the 1990s has been a good decade for many aspects of the professionalism argument, there are also many issues that do not fit well with the expectations of the argument, and this leads to the possibility that the professionals do not have the full story.

New Trends and Developments in the Literature: Symbiosis and Beyond

The post-Tiananmen period also sees some new trends and developments in how PLA scholars think about their subject. The writers who will be considered in this section are rather heterogeneous in their work, but they all have at least one of the following aspects in common. First, in the wake of Tiananmen and the subsequent and intense political campaign in the PLA, many observers began to look for an alternative conceptual approach to professionalism. Second, in the 1990s some PLA scholars started to take more interest in the literature on civil-military relations in other Leninist regimes.¹⁰⁰ Third, many PLA scholars began to think seriously that post-Deng civil-military relations might be different from the past.

In the early 1990s, both Cheng Hsiao-shih and Nan Li drew on the work of Soviet specialists in developing their analyses of the PLA's political work system. Cheng agreed with the work of William Odom,¹⁰¹ especially the latter's argument that the divide between military and civilian was an artificial one in Leninist regimes. Rather, Party and army should be regarded as a whole and civil-military relations are really relations within the party.¹⁰² While providing some valuable insights into the work of the GPD and making a valuable contribution by comparing the PLA to Taiwan's ruling Guomindang Party, Cheng did not really develop his ideas about civil-military fusion. Nor did he carry his analysis past the mid-1980s, when professionalism became more prominent within the PLA. Nan Li, on the other hand, drew on the work of Timothy Colton¹⁰³ to create an alternative argument about the political work

¹⁰⁰Prior to 1990 Roman Kolkowicz is virtually the only Soviet civil-military relations specialist whose work is cited by PLA scholars.

¹⁰¹William E. Odom, "The Party-Military Connection: A Critique," in Dale R. Herspring and Ivan Volgyes, eds., *Civil-Military Relations in Communist Systems* (Boulder: Westview Press, 1978), pp. 27-52. An updated version of Odom's argument can be found in William E. Odom, *The Collapse of the Soviet Military* (New Haven: Yale University Press, 1998).

¹⁰²Cheng Hsiao-shih, *Party-Military Relations in the PRC and Taiwan: Paradoxes of Control* (Boulder: Westview Press, 1990), p. 7.

¹⁰³Timothy J. Colton, *Commissars, Commanders, and Civilian Authority: The Structure of Soviet Military Politics* (Cambridge, Mass.: Harvard University Press, 1979); and Timothy J. Colton and Thane Gustafson, eds., *Soldier and the Soviet State: Civil-Military Relations From Brezhnev and Gorbachev* (Princeton: Princeton University Press, 1990). Colton argues for a participatory model. Colton disagrees with Odom's position that there is no institutional line between military and

system.¹⁰⁴ While Li's work provides some good arguments as to why the factional approach will become less useful as the political system bureaucratizes, he is less convincing in his argument that changes in the political work system invalidate the assumption that the PLA acts as a professional interest group.

Another study on the political work system that has had a wider impact on the debate on Chinese civil-military relations is that of David Shambaugh.¹⁰⁵ Shambaugh has drawn on the work of Odom, Perlmutter, and LeoGrande¹⁰⁶ to develop what he calls the "symbiosis" model. Briefly stated, Shambaugh accepts that the PLA displays many of the aspects of a professional force, particularly in terms of skill, expertise, and obedience to civil (Party) authority. Unlike Jencks and Joffe, however, Shambaugh contends that the PLA has historically been "inextricably intertwined" with the Party-state and is therefore very political as well as professional.¹⁰⁷ This apparent contradiction is resolved by understanding that the PLA and the Party have evolved together in a symbiotic relationship, each affecting the other. Indeed, the long period of revolution guaranteed that this symbiotic nature would last long after the founding of the PRC. Symbiosis, however, is not static. Shambaugh's analysis of the political work system within the PLA indicates that the relationship between Party and PLA changes over time and that there have been periods where the Party has been more dominant and sought control. In some respects this argument is not new. Several writers in the 1980s argued that the PLA and the Party formed a dual elite.¹⁰⁸ What is new is the emphasis on the professional aspects of the PLA¹⁰⁹ and the idea that symbiosis can evolve.

The strength of Shambaugh's approach is that it reconciles the problem of professional military behavior (loyalty to the Party) with the obvious fact the

civilian in the Soviet Union, but neither does he find such a boundary as conflict ridden as Kolkowicz does. Rather, the military participates in Soviet politics, bargaining and interacting with civilian elites. Neither side tends to dominate the other, but the military accepts the party's ultimate authority. Colton's model also allows for alliances and political support to crisscross the boundary between civilians and the military. In the end, though, he admits that the Soviet military does not participate as much in politics as it could. The Soviet military does not involve itself in societal choices.

¹⁰⁴Nan Li, "Changing Functions of the Party and Political Work System in the PLA and Civil-Military Relations in China," *Armed Forces and Society*, Vol. 19, No. 3 (Spring 1993), pp. 393-409.

¹⁰⁵David Shambaugh, "The Soldier and the State in China: The Political Work System in the People's Republic of China," *The China Quarterly*, No. 127 (September 1991), pp. 527-568.

¹⁰⁶Perlmutter and LeoGrande, "Party in Uniform"; and Odom, "The Party-Military Connection."

¹⁰⁷Shambaugh, "The Soldier and the State," pp. 527-533

¹⁰⁸See Bullard, *Political-Military Evolution*; and Dreyer, "Civil-Military Relations."

¹⁰⁹Cheng Hsiao-shih also draws heavily on Odom in his comparative work on political work systems in Mainland China and Taiwan. Unlike Shambaugh, however, he does not imbue the PLA with professional-like qualities in the 1980s. See Cheng, *Party-Military*, chapter five.

PLA does indeed participate in politics, albeit in a subordinate role. The symbiotic argument is also in many ways more appropriate to the Maoist and early Dengist period than the professionalism approach. The level of professionalization is so much higher in the 1980s and 1990s compared to the 1950s through 1970s that one wonders how much of Maoist civil-military relations can be explained by professionalism. Shambaugh's argument allows for the possibility of evolution from symbiosis to professionalism.¹¹⁰ I would agree with Shambaugh that the PLA is best thought of as being symbiotic before reform. There really was a dual elite and symbiosis reflects well the revolutionary legacies of the PRC. Professionalism in the PLA was at best partial before the 1980s. However, there is no denying that there has been considerable professionalization of the PLA since 1979 and no one could argue that the PLA has been moving away from symbiosis.¹¹¹ To this extent, symbiosis and professionalism are not alternatives but complementary. Joffe is correct in arguing that each describes part of what is a multi-faceted problem.¹¹²

Shambaugh has recently suggested that there have been subtle changes going on in the relationship between Party, state, and PLA in the 1990s.¹¹³ In this respect Shambaugh touches base with Paltiel.¹¹⁴ Paltiel also sees the Party-army connection as being symbiotic and argues that there are tensions in the constitutional framework of the Party-state-military relationship. He too sees the potential for important changes in the nature of this relationship. Exactly where these subtle changes may ultimately lead is far from clear. However, Shambaugh does provide some evidence that the state may be (stress on may) developing more direct controls over the armed forces, even to the point of the Party allowing the PLA more relative autonomy. Such a development, if it occurs, would be a logical result of the trend toward professionalism. It is known that some PLA officers desire a state-centered army. A new generation of professionally oriented civilians may also be open to the idea of a clear division of labor between state and Party that gives some control of the PLA to the state.

However, considerable caution is needed here. Leninist regimes are not known for their tolerance of state-centered armies, the Chinese Party especially so.

¹¹⁰See Shambaugh, "China's Military in Transition"; and Shambaugh, *Reforming the Chinese Military*, chapter two, unpublished manuscript.

¹¹¹Perlmutter and LeoGrande argued that symbiosis and professionalism were at opposite ends of a continuum of civil-military relations within Leninist regimes.

¹¹²Joffe, "Party-Army."

¹¹³Shambaugh, unpublished manuscript.

¹¹⁴Paltiel, "PLA Allegiance on Parade."

Even minor changes in the relationship between Party, state, and military would have a major impact on civil-military relations. William Odom is adamant in his new study that altering the link between Communist Party and military was very detrimental to the Soviet political system under Gorbachev.¹¹⁵ There is a real problem in determining how far one can go in reforming the Party-state relationship without undermining the Party-state itself.

James Mulvenon offers a rather different argument about where the PLA is going in the post-Deng era. He argues that civil-military relations are now essentially a balance of power with intense bargaining going on between civilian and military leaders over policy and distribution of resources.¹¹⁶ Mulvenon also argues that civil-military relations have moved from symbiosis to professionalism. However, he also argues that in a Leninist context, Huntington's notions of responsibility, corporateness, and expertise lead not to political quiescence but to political involvement. Expertise, he argues, may be a double-edged sword that makes it easier to intervene in domestic politics. Responsibility means that the PLA is very nationalistic in defending China's strategic interests, but he argues that the PLA has yet to grasp the other half of the equation,¹¹⁷ which is responsibility to society or to state. Corporate identity, when combined with the Party's demands that the PLA remain a political force, creates the potential for praetorianism. In making this argument, Mulvenon is one of few people within PLA studies who has noted that many scholars in the study of civil-military relations have argued that professionalism is a two-edged sword. It can lead to a withdrawal from politics and it can lead to intervention in politics.¹¹⁸ As evidence for his argument, Mulvenon cites the growing influence of the PLA on national security policy and bargaining surrounding the divestiture of the PLA's enterprises. It is an interesting argument and Mulvenon deserves credit for expanding the terms of debate on professionalism. However, it remains to be seen whether the bargaining and balance of power he describes are a temporary manifestation of the transition to a post-Deng China or if they are a more permanent state of affairs.

¹¹⁵See Odom, *Collapse of the Soviet Military*, especially chapter two and the conclusion.

¹¹⁶James Mulvenon, "An Uneasy Bargain: Party-Military Relations in Post-Deng China," unpublished manuscript.

¹¹⁷*Ibid.*, p. 6.

¹¹⁸The classic work on this point is Abrahamsson's *Military Professionalism*. Finer also argues that under certain circumstances professional militaries can intervene in politics. See S. E. Finer, *The Man on Horseback: The Role of the Military in Politics*, 2nd ed. (Baltimore: Penguin, 1976), pp. 20-21.

So we return to the opening argument of this paper. Twenty years ago there was greater clarity in the study of Chinese civil-military relations. Either civil-military relations would continue to be shaped by the politics of the Cultural Revolution era or reforms would take hold and move civil-military relations in a new direction. The PLA has been in transition for 20 years. Some of the concepts we use to analyze civil-military relations pre-date that transition. China is still a Party-state, but it is not the same Party-state it was 20 years ago. In the year 2000 we understand less about civil-military relations than in the past. The literature of the past ten years offers a variety of contradictory interpretations. Factional politics remain important, or it may be declining, or the basis for factions may be changing. The PLA is showing signs of being more professional, yet there are also many factors that serve to undermine that trend. The PLA may be moving, however uncertainly, to a more state-centered army. The PLA may be becoming more active in political bargaining with the Party. There may very well be some important trends that we are not yet aware of simply because we are not asking the right questions. In many respects all the main themes described here are looking at different parts of what is a multifaceted relationship between the PLA and the Party that created it. They point to the need to step back and try to integrate the various elements of that relationship to better understand how it has evolved over the years.

I would argue that we have taken current arguments as far as we can, using China alone as our model. One of the most striking features of PLA studies is how little comparative work has been done. To a certain extent that is natural. Many aspects of Chinese politics are highly unusual, if not unique. However, Chinese civil-military relations, like the rest of its politics, are becoming more like those of other countries and PLA scholars need to look to other countries to help us form ideas and questions, especially suggestions about paths for future research.

Comparative Civil-Military Relations

PLA scholars have made only limited use of the wide and varied comparative literature on civil-military relations. Most comparative work done on the PLA has been limited to the work that has come out of the Soviet Union, namely that of Kolkowicz, Odom, Colton, and Perlmutter and LeoGrande. The work of these scholars has certainly informed and enlivened the debate on issues such as professionalism and symbiosis, as Leninist regimes such as the PRC and the Soviet Union share many characteristics in common. However, PLA scholars

should not excessively rely on the Soviet case for comparative purposes. The early histories of the Soviet army and the PLA are very different.¹¹⁹ Many of the recent professional features of the PLA have been present in the Red Army for over 60 years. We, therefore, need to be aware of the possible differences between old, established professionalism and recent professionalization in comparing the role of the military in security policy in the Soviet Union and the PRC.¹²⁰ Moreover, the Soviet models currently being used by PLA scholars are from the pre-reform Soviet Union. As in China, economic reforms under Gorbachev unleashed a variety of social, political, and economic forces that have had an important impact on the military. Looking at the literature on civil-military relations under the Gorbachev reforms may give us new insights into how the wider reforms in China are affecting the PLA and perceptions of its role in the Chinese political system.¹²¹

Some writers, such as David Segal, Walter Bacon, and Robin Remington,¹²² have suggested that there is probably more similarity among those Communist states that experienced a guerrilla war than there are between guerrilla-origins militaries and the Soviet Union. PLA scholars are very much aware of the legacies of the PLA's early years and how they continue to affect the development of the PLA and civil-military relations. Yet little comparative work has been done on communist guerrilla armies or how they have managed the transition to modernized armed forces.¹²³

¹¹⁹For an interesting history of the early Soviet military see Mark von Hagen, *Soldiers of the Proletarian Dictatorship: The Red Army and the Soviet Socialist State, 1917-1930* (Ithaca: Cornell University Press, 1990).

¹²⁰For an interesting discussion on the role of military expertise in Soviet security policy, see Kimberly Marten Zisk, *Engaging the Enemy: Organization Theory and Soviet Military Innovation, 1955-1991* (Princeton: Princeton University Press, 1993).

¹²¹I have already cited Odom's study which extends his main thesis through 1991. See also Robert Baryliski, *The Soldier in Russian Politics: Duty, Dictatorship, and Democracy Under Gorbachev and Yeltsin* (New Brunswick, N.J.: Transaction Publishers, 1998); Dale R. Herspring, *Russian Civil-Military Relations* (Bloomington: University of Indiana Press, 1996); and Dale R. Herspring, "Redefining Civil-Military Relations: The Future of the Russian Military," *Problems of Post-Communism* (March/April 1997), pp. 47-55.

¹²²See Walter M. Bacon, Jr., "Civil-Military Relations in Romania: Value Transformations in the Military," *Studies in Comparative Communism*, Vol. XI, No. 3 (Autumn 1978), pp. 237-249. Robin Alison Remington, "Civil-Military Relations in Yugoslavia: The Partisan Vanguard," *Studies in Comparative Communism*, Vol. XI, No. 3 (Autumn 1978), pp. 250-264. David R. Segal, "Civil-Military Relations East and West," *Studies in Comparative Communism*, Vol. XI, No. 3 (Autumn 1978), pp. 310-326.

¹²³For example, there is extensive literature on the close and rather symbiotic relationship between Party and army in Cuba. See Louis William M. LeoGrande, "A Bureaucratic Approach to Civil-Military Relations in Communist Political Systems: The Case of Cuba"; Irving Louis Horowitz, "Military Outcomes of the Cuban Revolution"; Marta San Martin and Ramon L. Bonachea, "The Military Dimension of the Cuban Revolution," all in Irving Louis Horowitz, ed., *Cuban Communism* (New Brunswick, N.J.: Transaction Books, 1982); Jaime Suchlicki, ed., *The Cuban Military Under Castro* (Miami: North-South Center University of Miami Press, 1989). For that matter there are many parallels between communist guerrilla armies and other guerrilla armies. See, for example, Harold Crouch, *The Army and Politics in Indonesia*, rev. ed. (Ithaca: Cornell University Press, 1988).

In terms of understanding where Chinese civil-military relations might be headed, there is a growing literature on professionalization and political transition in former Leninist regimes. Zoltan Barany's work, for example, indicates that transformation to state-oriented professionalized armies in the former communist states of Eastern Europe is anything but a straightforward process, and that military elites in many of these regimes have resisted depoliticization.¹²⁴

Indeed, Leninist and post-Leninist regimes represent a wide spectrum of political outcomes, ranging from apolitical, professional, modern armed forces to praetorian militias. Understanding how the same regime type, Leninism, could produce so many different outcomes will help us understand better the processes taking place in Chinese civil-military relations and the Chinese political system.

There is also a considerable amount of literature on civil-military relations on non-Leninist one-party states. Taiwan is one area that should be explored more. The GMD has been essentially a Leninist party without Leninism, and there are several recent and very good studies of the military in Taiwan.¹²⁵ A somewhat different case is represented by Mexico, which is an excellent example of a professional military under the subjective control of a single party.¹²⁶ Interestingly, there are signs that as one party rule declines in Mexico, the military may be becoming more politically active.¹²⁷ The civil-military relations of other one-party states may also be informative at least concerning the role of military as guardian of the regime. More broadly, the recent arguments of Shambaugh and Mulvenon indicate that we should think more about new models for civil-military relations. As Mulvenon points out, professionalism may lead to more political intervention as well as less.¹²⁸

¹²⁴Zoltan Barany, "Democratic Consolidation and the Military: The East European Experience," *Comparative Politics*, Vol. 30, No. 1 (October 1997), pp. 21-41. See also Zoltan Barany, *Soldiers and Politics in Eastern Europe, 1945-1990: The Case of Hungary* (New York: St. Martin's Press, 1993); Constantine Danopoulos and Daniel Zirker, eds., *Civil-Military Relations in the Soviet and Yugoslav Successor States* (Boulder: Westview Press, 1996); and Constantine Danopoulos and Daniel Zirker, eds., *The Military and Society in the Former Eastern Bloc* (Boulder: Westview Press, 1999).

¹²⁵In addition to Cheng Hsiao-shih's book already cited, recent works on Taiwan included Monte Bullard, *The Soldier and the Citizen: The Role of the Military in Taiwan's Development* (Armonck: M. E. Sharpe, 1997); and David Shambaugh, "Taiwan's Security: Maintaining Deterrence Amidst Political Accountability," in David Shambaugh, ed., *Contemporary Taiwan* (Oxford: Clarendon Press, 1998).

¹²⁶Roderic Ai Camp, *Generals in the Palacio: The Military in Modern Mexico* (Oxford: Oxford University Press, 1992).

¹²⁷Roderic Ai Camp, "Mexico," in Constantine P. Danopoulos and Cynthia Watson, eds., *The Political Role of the Military: An International Handbook* (Westport, Conn.: Greenview Press, 1996).

¹²⁸See footnote 48.

Shambaugh's argument leads us more to the recent literature on military disengagement in Latin America, Asia, and Southern Europe.¹²⁹

One last area of the comparative civil-military literature that we need to look at concerns a wider meaning of the word "civil" in civil-military relations. Traditionally civil-military relations have focused on the issue of control. The literature abounds on studies of coups and attempted coups and more recently has focused on getting the military out of politics. But there are other dimensions of the civil-military nexus that deserve attention as well. Two recent works will serve as exemplars here. Elizabeth Kier has argued armed forces have distinct organizational cultures that shape policy preferences of the officer corps.¹³⁰ For Kier, each military organization has its own particular set of collectively held beliefs based on historical experience and other factors. This set of particular beliefs is separate from professional values common to all modern military professionals and separate from the beliefs held by civilian policymakers.¹³¹ Organizational culture shapes the preferred ends of the particular officer corps. Thus, in Kier's study, two professional militaries, those of Great Britain and France, had very different preferences on national security issues during the 1920s and 1930s. Given the PLA's new activity in security policymaking, organizational culture may be a fruitful approach in understanding PLA preferences.

Stephen Rosen makes a somewhat different cultural argument by positing that militaries mirror their society even if the military is highly professional.¹³² For PLA studies, this type of approach has many possibilities. The PLA was born in a peasant society. Many of its traditions, such as economic activity, have roots in China's past. Yet in the 70 years of the PLA's existence, enormous changes have taken place in Chinese society. Huntington argued that officers are distinct and separate, and experts on civil-military relations have tended to follow his lead. This is misleading. The PLA and its relations with the Party must also be understood in light of what changes have occurred in society and how they affect the political system and civil-military relations. Looking at these issues will strengthen and better inform the ongoing debate about the

¹²⁹See, for example, Larry Diamond and Marc F. Plattner, eds., *Civil-Military Relations and Democracy* (Baltimore: The Johns Hopkins University Press, 1996). Two good case studies are John Samuel Fitch, *The Armed Forces and Democracy in Latin America* (Baltimore: The Johns Hopkins University Press, 1998); and Wendy Hunter, *Eroding Military Influence in Brazil: Politicians Against Soldiers* (Chapel Hill: University of North Carolina Press, 1997).

¹³⁰Elizabeth Kier, *Imagining War: French and British Military Doctrine Between the Wars* (Princeton: Princeton University Press, 1997).

¹³¹*Ibid.*, p. 30.

¹³²Stephen Peter Rosen, *Societies and Military Power: India and Its Armies* (Ithaca: Cornell University Press, 1996).

study of civil-military relations in China. By taking a more comparative approach we will not only enhance our understanding of Chinese civil-military relations, we will be able to contribute to the rest of the literature rather than just borrowing from it.

2. Commentary on Civil-Military Relations in China: The Search for New Paradigms

By David Shambaugh¹³³

With the exception of Chinese military expenditure, there is probably no area of PLA studies more enigmatic and less transparent than civil-military relations. Insufficient data has, however, not deterred scholars and other analysts from producing dozens of articles and book chapters and a handful of books on civil-military or Party-army relations in the PRC.¹³⁴ Presented with a lack of hard data, analysts are forced into time-tested tea leaf reading, biographical analysis, and a large dose of conjecture. Hong Kong and Taiwanese newspapers provide fodder for such conjecture, but more often than not prove to be faulty guides to empirical understanding.

Tom Bickford has provided an admirable survey and critique of this literature in his chapter. His grasp of the voluminous secondary literature is impressive and his paper represents a significant investment of time and effort. Bickford offers a comprehensive and thought-provoking overview, as well as providing his own critical judgments of work produced in this subfield of PLA studies over the past 20 years. I can only commend it with little emendation. I find myself in agreement with many of his observations and judgments—particularly his conclusion and recommendation that “PLA scholars have taken current ideas as far as they can go and it is increasingly important to tap into the wider civil-military literature outside of Chinese studies.”

A Subject in Search of New Paradigms

Bickford's analysis, and a re-reading of key studies in recent years, leave this observer persuaded that the sub-field of civil-military relations in

¹³³The author is Professor of Political Science and International Affairs Director, China Policy Program, George Washington University, and Non-Resident Senior Fellow, Foreign Policy Studies, The Brookings Institution, Washington, D.C.

¹³⁴Monte Bullard, *China's Political-Military Evolution: The Party and the Military in the PRC, 1960–1984* (Boulder: Westview Press, 1985); Cheng Hsiao-shih, *Party-Military Relations in the PRC and Taiwan: Paradoxes of Control* (Boulder: Westview Press, 1990); Fang Zhu, *Gun Barrel Politics: Party-Army Relations in Mao's China* (Boulder: Westview Press, 1998); Jing Huang, *Factionalism in Chinese Communist Politics* (New York: Cambridge University Press, 2000).

contemporary China and PLA studies is at a juncture in its analytical development, as past paradigms have lost much, if not all, of their explanatory power. This is not because they were theoretically inadequate, as in fact they were very helpful constructs to depict civil-military relations in earlier periods. They have lost their explanatory efficacy because PLA and CCP elites have evolved in such a way in the 1990s that the earlier "models" are no longer empirically substantiated by the composition of new Party and military elites, and a number of other new developments associated with modernization, specialization, regularization, and professionalism.

As a result, the rules of the civil-military game are changing and there exists a new empirical dynamic in Party-army relations. As noted below, the new dynamic is characterized by a number of emerging tendencies. Among these is the bifurcation of Party and military elites. The emergence of the current generation of top Party leaders who have not a day of military experience, and the vast majority of senior military leaders who have no experience in politics and do not come from GPD backgrounds (Chi Haotian and Wang Ruilin being the exceptions to the rule), have extinguished the utility of the "interlocking directorate" argument, the "symbiosis thesis," the Party "control" argument, and coalition/factional analysis. With generational change and retirements, the field army thesis is also no longer capable of explaining military allegiances (although it retained some efficacy as late as the early-1990s and pre-Deng succession).¹³⁵ Personal allegiances in the military today largely derive from shared geographical assignments, service loyalties, and professional military education (PME), such that the promotion ladder in the PLA today has become remarkably de-politicized.¹³⁶ Patron-clientalism remains important, as is evident in the Zhang Zhen and Zhang Wannian networks, but promotions have become largely de-personalized. Some identify a "Shandong network" of senior officers who hail from the province, but this is a questionable basis for affiliations and loyalties.

On the civil side of the civil-military dynamic, the new CCP elite also displays a number of new avenues of career advancement and political allegiance: university and overseas training (e.g., Qinghua University and time spent in the Soviet Union in the 1950s); service in the Shanghai Party apparatus; functional ministerial service in the engineering and heavy industrial sectors; intra-

¹³⁵See Michael Swaine, *The Military and Political Succession in China* (Santa Monica: RAND, 1992).

¹³⁶See "China's Post-Deng Military Leadership," in James Lilley and David Shambaugh, eds., *China's Military Faces the Future* (Armonk, N.Y.: M. E. Sharpe, 1999); and James C. Mulvenon, *Professionalization of the Senior Chinese Officer Corps* (Santa Monica: RAND, 1997).

ministerial client networks; and work in Central Committee departments (particularly the Propaganda and Organization Departments). Like the military, but perhaps even more so, patron-client networks continue to characterize upper-elite mobility as Jiang Zemin, Li Peng, and Zhu Rongji all have groomed and promoted their protégés.

In addition to elite turnover, I note a number of other “professional” characteristics below, which cumulatively suggest that a new era of civil-military relations has dawned in China. This opens up new potential paradigms for analysis, some more familiar in the comparative civil-military literature: corporatism, praetorianism, neo-institutionalism, statism, inter-service resource competition, socialization theory, technocracy theory, interest group theory, organization theory, cohort analysis, and so forth.

The underlying dynamic catalyst is professionalization. As Bickford notes, professionalism has long been a feature of civil-military studies in the PRC (as exemplified in the work of Joffe and Jencks)—but it has always been professionalism within an environment of institutionalized politics (via the General Political Department, Discipline Inspection Committees, Party Committees, Party membership for all officers, the “interlocking directorate” in the Central Committee, provincial Party committees, and National People’s Congress [NPC]). Politics and professionalism have never been mutually exclusive in the PLA. Rather the PLA has been, as Ellis Joffe so aptly described, a “Party-army with professional characteristics.”¹³⁷ I do not want to overstate the changes of recent years, as these institutions all still function and serve simultaneously as the bridge between Party and army as well as the Leninist methods of penetration of the military by the Party. As such, we cannot fully pronounce the symbiosis thesis dead (or even moribund)—as it will always exist by the intrinsic nature of communist militaries (this is also true in those developing countries, like Mexico and Indonesia, where “hegemonic” ruling parties have co-opted their militaries).

But the nature of symbiosis is changing and is under strain, as Party and army elites have cleaved apart and the military as an institution has carved out more autonomous corporate space for itself. After 70 years of Party-army symbiosis, this organic relationship is unmistakably changing. Yet it would be a mistake to proclaim the death knell of the symbiosis thesis, particularly in a premature rush to proclaim the “victory of professionalism.” If there ever was a false dichotomy in Chinese civil-military relations, it is that between symbiosis and

¹³⁷Ellis Joffe, “Party-Army Relations in China: Retrospect and Prospect,” in David Shambaugh and Richard Yang, eds., *China’s Military in Transition* (Oxford: Clarendon Press, 1997), p. 36.

professionalism. As Joffe's observation above captures, and I have also argued, they are two sides of the same dialectical coin in the PLA. Bickford also notes this with his observation that "... symbiosis and professionalism are not alternatives, but complementary." Unfortunately, attempts to too literally apply Huntington's criterion of apolitical professionalism to the PLA have caused some observers to falsely juxtapose the two and thereby underplay the importance of the other (depending on which of the two elements one is more partial to). Symbiosis and professionalism have coexisted in the PLA since the 1950s, although each has been ascendant at different times. Recognizing this dialectical interaction over time, I would argue that today we are witnessing a more linear evolution from symbiosis to the key elements of Huntingtonian professionalism:

- the decoupling of the "interlocking directorate" at the central and provincial levels;
- firm subordination to civilian authority without regularized military involvement in civilian policy making;
- the emergence of a more technocratic, cohesive, and professionally educated officer corps;
- a more pronounced corporate esprit de corps in the armed forces generally and in each service particularly;
- increased functional specialization;
- meritocratic promotions;
- declining time spent on "political work" in the military, with greater attention to political allegiance to the CCP than to a political ideology;
- the prohibition of commercial involvement for the military and paramilitary forces;
- greater attention to codifying the roles of the military through laws and regulations; and,
- nascent moves toward building (at least legislating) a statist "national army."

These developments are definite signs of movement toward Huntington's three principal criteria for military professionalism: expertise, responsibility, and corporateness.

Toward Greater Autonomy and a National Army?¹³⁸

These changes also indicate greater *relative institutional autonomy* for the military. Since the mid-1990s we may be witnessing increased military autonomy from the Party-state in general, as well as nascent signs of increased state (i.e. government) control of the armed forces.¹³⁹ This would suggest a more linear evolution from *symbiosis* (pre-1989) to *control* (post-1989) to *relative autonomy* (post-1997). Increased state control need not imply, ipso facto, the zero-sum displacement of the Party's relationship with the army. From one perspective, the relationship of the military to the state and Party can be seen as complementary. That is, the state may be increasing its *mechanisms of control* and *lines of authority* over the armed forces, while the Party withdraws to a more "elevated" position. This has certainly been the case during the last decade in terms of the Party-state relationship with respect to economic management, whereby the CCP sets forth the broader policy direction (*fangzhen*) while the state formulates more concretely the policy line (*luxian*) and implements specific policies (*zhengce*). Party committees have been largely removed from ministerial, village, and enterprise-level decisionmaking. The issue here for the military is really one of relative autonomy and jurisdictional distinctions between institutional hierarchies and within functional policy spheres (described by political scientists as the "zoning of authority"). As the Party has increasingly "withdrawn" from its former totalistic and monopolistic influence over society and economy, greater "space" and relative autonomy have been created for institutional and civic actors in China (although I would not endorse the view that civil society has blossomed in China). While the tight symbiosis of Party and army was forged early on, it is necessarily one of the later bonds to be broken in the reform process.

As a result, the rules of the game in civil-military relations are changing and evolving. Indeed, really for the first time, there now exist rules that define the military's functions and roles. These have been codified in several laws, documents, and regulations in recent years. Their promulgation has been instrumental in advancing the twin goals of regularization (*zhengguihua*) and

¹³⁸The following discussion is drawn from my *Reforming China's Military* (University of California Press, forthcoming).

¹³⁹Many analysts are dubious that this process is under way, and some—such as Jeremy Paltiel—believe it to be a false dichotomy. Paltiel asserts that "the Chinese armed forces have never faced a choice between loyalty to the state and obedience to the Party." See Jeremy Paltiel, "PLA Allegiance on Parade: Civil-Military Relations in Transition," *The China Quarterly*, No. 143 (September 1995).

professionalization (*zhiyuehua*) of the armed forces. The NPC has passed 12 laws and regulations, including the National Defense Law (NDL), Military Service Law, Military Facilities Protection Law, Civil Air Defense Law, Reserve Officers Law, Hong Kong Special Administrative Region Garrison Law, Military Service Regulations, and Military Officers Ranks Regulations. The State Council and CMC have jointly adopted 40-odd administrative laws and regulations, while the CMC has implemented 70-odd on its own, while individual PLA departments, service arms, and military regions have formulated more than one thousand military rules and regulations.¹⁴⁰ Taken together, the roles and functions of the PLA are now specified as never before.

Of particular importance to our considerations of civil-military relations, the NDL has significant implications. Adopted as law by the Fifth Session of the Eighth National People's Congress in March 1997, the new NDL is striking for one notable fact: the subordination of the military to the state. The term for state, *guojia*, is used no less than 39 times in the NDL, while there is only a single reference to the Party. In China, the "state" is operationalized to mean the government, that is, the president of the PRC, the state council and its constituent ministries and commissions, and the NPC. The roles of all three vis-à-vis the armed forces are specified in detail in the NDL.

The effort to delineate the responsibilities of state offices over the military parallels efforts undertaken during the 1980s, when there was a conscious and deliberate attempt to more clearly demarcate the jurisdictional responsibilities of the CCP, state council, and NPC—particularly the policy of "separating party from government" (*dang-zheng fenkai*) in economic policymaking and commercial management. Of course, this general process required the promulgation of numerous laws and regulations, which had the cumulative effect of strengthening the NPC as a fourth institutional pillar of the PRC, along with the Party, army, and government. In the process, the NPC itself gained increased oversight functions vis-à-vis the government. State council policies, budgets, and appointments became at least nominally subject to legislative review by the NPC. However, the Communist Party as an institution has always insisted that it should police itself and its own membership and this remains unchanged. This has included Party members in the armed forces, who are subject to the CCP's Discipline Inspection Commission system. The CCP accordingly has its own constitution and its own "election" procedures for its leadership, clearly separating the Party from the state. Its relationship to the

¹⁴⁰ *China's National Defense* (Defense White Paper), issued by the Information Office of the State Council, July 1998.

armed forces has always been one of either symbiosis or control, as the Party has institutionally penetrated the military to ensure this relationship.

Thus, the National Defense Law of 1997 suggests some fundamental departures in the relationship of the armed forces (which includes the PAP, militia, and reserves) to the Party and state. Only in a single clause is the relationship of the army to the Party mentioned (Article 19): "The armed forces of the People's Republic of China are subject to leadership by the Communist Party, and CCP organizations in the armed forces shall conduct activities in accordance with the CCP constitution." This article presumably refers to Party committees and Discipline Inspection Commission work. Moreover, the article could have been worded in a much stronger fashion, such as the usual use of the term "... under the *absolute leadership* of the CCP (*dang de juehui lingdao*)." Everywhere else in the NDL the military's subordination to the state is made abundantly clear. The NDL clearly stipulates responsibilities for the state and state leaders for national defense matters. The absence of mention of the CCP is striking in this important law, which signals an important shift in civil-military relations. The shift signaled in the NDL was explicated further in the 1998 National Defense White Paper. While the White Paper includes the single clause that "given the new historical conditions the Chinese army upholds the absolute leadership of the CCP . . .," greater emphasis is placed on the NPC, state council, PRC president, and CMC as the institutions controlling the PLA.

The promulgation of the NDL and publication of the White Paper (in itself a significant step in transparency) together provide new and important evidence that the PLA is being placed squarely under state control with the concomitant removal of Party controls. To be sure, ambiguities remain. For example, it is unclear if references to the CMC mean the state or Party CMC. This may be a moot point given that the membership composition of these two bodies is currently identical (many Chinese refer to the two CMCs as "one organization with two signs": *yige jigou, liange paizi*), although the language describing the CMC strongly suggests that its relationship to the armed forces is either one of joint administration with the state council or merely "line authority" to implement decisions, whereas broad decisionmaking authority seems to rest ultimately with the state council, NPC standing committee, and president of the republic. But here, ambiguity exists insofar as Jiang Zemin concurrently holds the offices of president, CCP general secretary, and CMC chairman. Only when the president no longer heads the Party but directs the CMC will we know for sure that the Party-army link has been fully severed. Another sign would be when the CMC becomes a body solely composed of military officers (similar to the Joint Chiefs of Staff) and the minister of defense is a civilian.

While one should have little doubt that the CCP and its leadership remain the ultimate source of political power and authority in China, it does seem clear that these steps taken in 1997 and 1998 are efforts to disentangle the military from Party control. While the 1975 and 1978 constitutions both explicitly subordinated the armed forces to the command of the CCP and its chairman, that is no longer the case. Even much of the ambiguity of the early-1990s is being clarified.¹⁴¹ Of course, it is difficult to determine the extent to which these reforms are taking root normatively and psychologically in the army, state, and society. Interviews with PLA officers in the late-1990s still suggest substantial ambiguity over the issue of state versus Party control (in fact, to many it remains a non-issue).

The Need for Comparative Perspectives¹⁴²

Changes in the interrelationship of Party, army, and state in contemporary China must also be viewed in the context of emerging patterns of civil-military relations across Asia. This is another place where I fully concur with Bickford's analysis and recommendations.

With few exceptions (North Korea, Vietnam), civil-military relations in East, Southeast, and South Asia have been fundamentally redefined in recent years in the process of democratization. In a number of countries that have known harsh authoritarian and military rule (South Korea, Taiwan, the Philippines, Indonesia, Thailand, Bangladesh, and Pakistan), the armed forces have been removed from political power and influence, made accountable to sovereign legislatures, and returned to the barracks. Soldiers in mufti have been replaced by democratically elected civilians. In all of these countries, the emasculation of political power and praetorian tendencies of militaries have been a crucial element in establishing democratic institutions and rule. The trend in Asia follows that of Latin America and Africa. The experiences of these countries, but particularly Taiwan, are poignant for the future of civil-military relations in China. Thus far, the emerging literature on the process of democratic transition in Asia has paid relatively minor attention to the civil-military dimension,¹⁴³ although it is viewed as an important variable in the comparative literature.¹⁴⁴

¹⁴¹For excellent and learned discussions of the legalities during this period see Jeremy Paltiel, "PLA Allegiance on Parade: Civil-Military Relations in Transition," *op. cit.*, and "Civil-Military Relations in China: An Obstacle to Constitutionalism?" *The Journal of Chinese Law* (September 1995), pp. 35-65.

¹⁴²This section also draws on chapter 2 from my *Reforming China's Military*.

¹⁴³See Larry Diamond and Marc F. Plattner, eds., *Democracy in East Asia* (Baltimore: Johns Hopkins University Press, 1998); and Larry Diamond, Marc F. Plattner, Yun-han Chu, and Hung-

More comparative research needs to be done on Asian militaries and civil-military relations.¹⁴⁵ Certainly there is a large comparative literature on civil-military relations in developing countries that could be instructive and insightful for PLA specialists.¹⁴⁶ An interesting and potentially very pertinent literature has also begun to address civil-military relations in democratizing Taiwan.¹⁴⁷ Scholars of the PLA and Chinese politics also need to place the recent changes in civil-military relations in the PRC outlined above in this broader regional context, while comparativists need to look more closely at the China case. The current state of politics in the PRC certainly does not suggest that a creeping transition to democracy is silently taking place,¹⁴⁸ as the CCP retains its grip on power, but at the same time we must not mistake the potential significance of the legislative attempts to subordinate the PLA to state control.

The China case must also be placed in the comparative context of former socialist states led by communist parties.¹⁴⁹ The literature on former Soviet civil-military relations has always been particularly useful for PLA specialists. It is interesting in reading this literature to see that scholars of Soviet civil-military relations have adopted and argued exactly the same tripartite typology as those in PLA studies: Timothy Colton argued the symbiosis/participation thesis,

mao Tien, eds., *Consolidating the Third Wave Democracies* (Baltimore: Johns Hopkins University Press, 1997).

¹⁴⁴See Larry Diamond and Marc F. Plattner, eds., *Civil-Military Relations and Democracy* (Baltimore: Johns Hopkins University Press, 1996).

¹⁴⁵A promising effort is under way at the East-West Center under the direction of Muthiah Alagappa. See the draft papers presented at the conference on "The Soldier and the State in Asia," Honolulu, Hawaii, October 1998.

¹⁴⁶The pertinent literature here is extensive, and Tom Bickford's chapter offers many useful sources, but also see, for example: Abraham F. Lowenthal and Samuel J. Fitch, eds., *Armies and Politics in Latin America* (New York: Holmes and Meier, 1986); Alfred Stepan, *Rethinking Military Politics* (Princeton: Princeton University Press, 1988); Viberto Selochan, *The Military, the State, and Development in Asia and the Pacific* (Boulder: Westview Press, 1991); Amos Perlmutter, *The Military and Politics in Modern Times* (New Haven: Yale University Press, 1977); Eric A. Nordlinger, *Soldiers in Politics* (Englewood Cliffs, N.J.: Prentice-Hall, 1977); and Catherine M. Kelleher, ed., *Political-Military Systems* (Beverly Hills: Sage Publications, 1974).

¹⁴⁷Monte Bullard, *The Soldier and the Citizen: The Role of the Military in Taiwan's Development* (Armonk, N.Y.: M. E. Sharpe, 1997); Cheng Hsiao-shih, *Party-Military Relations in the PRC and Taiwan* (Boulder: Westview Press, 1990); Bruce J. Dickson, *Democratization in China and Taiwan: The Adaptability of Leninist Parties* (Oxford: Clarendon Press, 1998); and David Shambaugh, "Taiwan's Security: Maintaining Deterrence Amidst Political Accountability," in David Shambaugh, ed., *Contemporary Taiwan* (Oxford: Clarendon Press, 1998).

¹⁴⁸For one view to the contrary see Minxin Pei, "Creeping Democratization' in China," in Diamond, Plattner, Han, and Tien, eds., *Consolidating the Third Wave Democracies*, op. cit., pp. 213-227.

¹⁴⁹This sub-field has also generated a substantial, if somewhat dated, literature. See, for example, Dale Herspring and Ivan Volges, eds., *Civil-Military Relations in Communist Systems* (Boulder: Westview Press, 1978); Jonathan Adelman, ed., *Communist Armies in Politics* (Boulder: Westview Press, 1982); Dale R. Herspring, *Russian Civil-Military Relations* (Bloomington: Indiana University Press, 1996); and Kenneth M. Currie, *Soviet Military Politics* (New York: Paragon Press, 1991).

Roman Kolkowicz the control thesis, and William Odom the autonomy thesis.¹⁵⁰ Broadly speaking, the experiences of the former Soviet and East European militaries suggest that professionalization and Party control are by no means mutually exclusive, but in not a single case were these militaries consciously placed under state control via legislative means. Indeed, in many cases they fought, unsuccessfully, to save their ruling communist parties.¹⁵¹ The problem for the Chinese military has never been to subordinate itself to civilian authority, but rather to state control. Also, unlike the Soviet and East European experiences, the PLA has exhibited a long-standing tension between professionalization and attempts at politicization by the CCP.¹⁵² In both of these respects, the reforms noted above suggest that the Chinese military is moving—or rather being moved—into an entirely new era of civil-military relations and corporate professionalism. As such, one would surmise that the PLA will not shirk the task of defending national security against external enemies—but will it do so again against internal enemies that may threaten the rule of the Communist Party? This will be the ultimate test of the redefined relationship of the army to the Party and state in China.

Toward a New Century of Analysis

These are some possible comparative areas for scholars and analysts of civil-military relations in China to pursue. Professor Bickford's paper suggests others as well. While the sub-field may be at an analytical juncture and in need of infusion of new theoretical and comparative perspectives, it is hardly an intellectually impoverished research sphere. There are good minds at work on it, inside and outside of the Academy and government. Moreover, it continues to have important relevance for the future direction of China, as the military remains the one institution ultimately capable of holding the country together and keeping the Party in power.

There are important changes taking place that need to be tracked, particularly the new generation of military officers taking commands in the regions and

¹⁵⁰See Timothy J. Colton, *Commissars, Commanders, and Civilian Authority: The Structure of Soviet Military Politics* (Cambridge, Mass.: Harvard University Press, 1979), and Colton and Gustafson, eds., *The Soldier and the Soviet State: Civil-Military Relations From Brezhnev to Gorbachev* (Princeton: Princeton University Press, 1990); Roman Kolkowicz, *The Soviet Military and the Communist Party* (Princeton: Princeton University Press, 1967); and William E. Odom, *The Collapse of the Soviet Military* (New Haven: Yale University Press, 1998).

¹⁵¹See Gerald Segal and John Phipps, "Why Communist Armies Defend Their Parties," in Richard H. Yang, ed., *China's Military: The PLA in 1990/91* (Kaohsiung: National Sun Yat-sen University, 1991), pp. 133–144.

¹⁵²In the large literature on this subject, see in particular Harlan Jencks, *From Muskets to Missiles: Politics and Professionalism in the Chinese Army, 1949–1981*, op. cit.

central departments. How these individuals, and their civilian counterparts in the Party, think about national security and domestic security is not well known or understood. Much basic research needs to be done in trying to explore the interrelationships of their training and socialization with their world views and attitudes about politics. Do the strong insularity, parochialism, and ardent nationalism apparent in the current High Command also characterize the current crop of major generals and senior colonels—who will be running the PLA in five to ten years—or do they exhibit a more cosmopolitan and sophisticated view of the world and security matters? How does the next generation of Party and state leaders view China's security and what are their views of the PLA as an institution? Will the trends toward relative institutional autonomy for the PLA continue, or will there be attempts to re-subordinate the military to the Party? Will there be further movement toward subordinating the military to the state? What will be the principal arenas of institutional interaction for civilian and military elites? Will military elites attempt to influence other policy domains, particularly foreign policy? How will the military, and particular service arms, attempt to influence budgetary and resource allocation decisions? What happens when (not if) there again occurs substantial domestic unrest—how will the PAP and PLA respond?

These and other questions suggest themselves—but answers or even educated guesses are not apparent. The continuing dearth of empirical knowledge about the arena of civil-military interaction in China is distressing; indeed it seems worse than ever before. Efforts must be redoubled to mine the available published data that may provide clues and answers to these and other questions, and efforts must be strengthened to interact with Chinese military officers whenever possible through "Track II" and other avenues. Civil-military study in China remains a potentially rich, if frustrating, field of research endeavor—but for it to advance in the twenty-first century new paradigmatic and comparative perspectives are needed.

3. PLA Force Structure: A 20-Year Retrospective

By Dennis J. Blasko

The force structure of any military consists of numbers of personnel and equipment, types of equipment, command and control mechanisms which define organizational structure, and the composition of units. With regard to the Chinese military, most discussion about force structure emphasizes numbers and equipment, especially new equipment entering, about to enter, or rumored or reported to be entering the inventory. (Some call this "bean counting.") Descriptions of command relationships are also common, even if the implications of certain organizational structures rarely are analyzed adequately. Often discussions of force structure are only a small part of longer articles and books.

Currently there is a significant lack of literature dedicated to the existing and evolving force structure of the Chinese armed forces. However, without a working knowledge of the basic building blocks of military organization, reliable judgments about military capabilities and effectiveness cannot be properly made. As the machinery of warfare becomes more technical in nature, the characteristics of individual weapons are less important than how the various systems of weapons are integrated together. It is through force structure, doctrine, and tactics that this essential integration takes place. Effectively designed force structures create synergies that multiply the effects of individual units and weapons. Thus, a thorough examination of force structure must do more than simply count beans or describe command relationships.

Introduction

Over the past 20 years, the force structure of the Chinese armed forces, which includes the active and reserve units of the People's Liberation Army (PLA), People's Armed Police (PAP), and militia, has changed or been modified according to:

- The role of the military in Chinese society;
- The external threat to China;

- China's military doctrine;
- Lessons learned from studies of foreign militaries; and
- Technologies and equipment available.¹⁵³

Foreign observers have been only moderately successful in keeping track of these changes. Lack of direct access to the Chinese military in the late-1970s forced a dependence on limited information that could be derived from the Chinese media, primarily newspapers and magazines. As China opened to the West, contact with the PLA gradually increased, which greatly improved understanding. However, even with greater access to the mainland and the military, often there was a lag of one to two years before outsiders became aware of, could confirm, and would write about many of the changes in the PLA's force structure.

Unfortunately, most of the analytical writing about the PLA is confined to a few books and scholarly or specialist journals that are not widely available to the general public. Because of the nature of the journals and the publishing industry, most of the scholarly or technical writing on the PLA is delayed by the editorial process. Therefore, most of the public gets its information about the Chinese military through the mass media: newspapers, magazines, and the electronic media of television, radio, and now the Internet. But because many journalists have limited experience in China and very few have even the basic knowledge of military operations, misunderstanding and distortion of military developments have been major problems. Much of the mass media reporting on the Chinese military is superficial, focusing on numbers and equipment, and subject to manipulation by those with a non-objective agenda. Often the analysis necessary to put Chinese force developments into context can be found only in the books and journals that are published months or years after the events actually occurred. Especially in the atmosphere that surrounds the Chinese military in the late-1990s, this situation calls for writings about the PLA to be more understandable, timely, and accessible to the layperson.

A Short Overview of Doctrine and Force Structure

People's War Predominant

In the late-1970s, a bloated PLA of over four million personnel was structured to defend the Chinese mainland using the doctrine of "people's war." China's

¹⁵³The author would like to thank Dr. Dorothy Fontana for suggesting these last two determinants of force structure. Additionally, the force structure in other countries' militaries may also be influenced by treaty or alliance commitments. China has no such treaty obligations.

main threat was its communist neighbor to the north, the Soviet Union. The force was in the process of "returning to the barracks," that is, removing itself from involvement in all aspects of civil society ranging from governance functions to running factories. Military modernization was acknowledged as necessary by the central leadership, but listed last among the Four Modernizations. The low priority for military modernization translated directly to low defense budgets, a situation that has been a key constraint on military modernization into the late-1990s. The PLA was required to grow much of its own food and produce in its factories many of the light industrial goods necessary for basic survival and mission accomplishment. In 1975, Deng Xiaoping called for cuts in this unwieldy force, but he was not able to implement them until he assumed China's leading political role in 1978.

The PLA was dominated by the army and had a continental orientation. Its ground forces were organized around infantry corps, also called field armies, which generally had three infantry divisions and smaller armor, engineer, artillery, and other combat support or combat service support units. The structure lent itself to light infantry operations with some assistance from the other smaller ground force branches. In theory, a large militia would provide logistical and some combat support to main force and local force units as they "lured the enemy in deep" and drowned him in the vastness of continental China. Air and naval forces primarily had a defensive mission and, for the most part, operated independently of the ground forces. China's nuclear forces were small, only about ten years old and structured for deterrence, and, should deterrence fail, to conduct retaliatory strikes against population centers in the USSR and U.S. forward bases in Asia.

People's War Under Modern Conditions on the Rise

In the late-1970s and early-1980s, PLA strategists began considering a doctrinal modification that was intended to defend China closer to its borders and fight the Soviets in a more mobile style of war with a combined arms and joint force. Nuclear weapons were likely to be used. This new doctrine was named People's War Under Modern Conditions. It called for a more flexible, professional PLA, incorporating increased numbers of modern weapons into its inventory. The ground forces emphasis shifted more to tanks, self-propelled artillery, and armored personnel carriers. This type of equipment added more mobility to the force and, if properly outfitted, could provide a degree of protection from the nuclear, biological, and chemical (NBC) weapons the Soviets were expected to employ.

However, because of the size and backwardness of the force, the cost of equipping enough of it with sufficient modern weapons to fight the Soviets was prohibitive to the Chinese budget. The Chinese defense industries were not up to the task of producing state-of-the-art weapons, so the PLA basically had to make do with the weapons in its inventory, upgraded by a few modifications. Only a few small purchases of more modern equipment from abroad (including some weapons from Western countries) could be afforded, and these were allocated only to selected units. Out of necessity, a large portion of the PLA remained structured best for the old-style People's War. Nevertheless, beginning in the 1980s, PLA infantry units that previously had very few vehicles began to be issued enough trucks to make them road mobile. This relatively inexpensive equipment upgrade (compared to the cost of equipping the force with enough armored personnel carriers or helicopters to transport the infantry) greatly increased the speed and distance forces could maneuver.

A reduction in the PLA's size removed some organizations with largely non-military missions from the force structure. In the early-1980s, the Railroad Construction Corps was turned over to the Ministry of Railways, and the Capital Construction Corps and Xinjiang Production and Construction Corps were removed from the PLA's control. Security and border defense units were transferred to the newly created paramilitary PAP. The PAP's main mission was domestic security, which, in theory, allowed the PLA to concentrate more on its external defense role. Still, the PLA retained a secondary mission of internal security. In 1984, a newly formed reserve force began to assume some of the tasks the militia traditionally was assigned.

The Beginnings of Local War

In 1985, Hu Yaobang announced publicly that the PLA would be cut by one million personnel in the next two years. The PLA leadership understood that these reductions would permit the integration of the branches of its ground forces and its naval and air forces required to conduct modern warfare. Plans were made to reduce the number of military regions from 11 to 7 and to transform the structure of the 37 field armies into "group armies," bringing together tank, artillery, anti-aircraft artillery, engineer, and NBC defense units under a combined arms, corps-level headquarters. These organizational changes were made over the course of the million-man reduction.

Also in 1985, Deng declared that the threat of a major war was remote. Instead, Deng forecast the more likely scenario to be limited, local wars fought on China's periphery. Military planners then began to think about how such a

Local War would be fought and how the PLA should be structured to meet these new challenges. While the doctrine to fight Local War was being developed, People's War Under Modern Conditions concurrently remained the PLA's primary doctrine for planning and training purposes. Because both doctrines were modernizations over the People's War concept, many of the force structure changes applicable to People's War Under Modern Conditions were appropriate for Local War. However, concepts in this new type of limited war were unfamiliar to many old cadres, some of whom resisted change.

By 1988, the personnel reduction was complete and the force numbered somewhere slightly over three million. Among other changes, the 37 field armies were reduced to 24 group armies and thousands of units at the regimental level and above were disbanded. The formation of small, mobile "Fist" or "Rapid Reaction Units" (RRUs) was a major organizational development peculiar to the Local War doctrine, which was becoming the dominant way of thinking about war. Among the group armies and within the PLA Air Force and Navy, a few units were designated as RRUs, were equipped at least partially with new equipment, and were on call to be deployed within hours of alert. RRUs were to be found in all military regions and could be deployed locally or wherever needed in the country. The air force's 15th Airborne Army of three divisions became the PLA's primary strategic RRU. The relatively new five thousand-man marine force in the navy could also perform rapid reaction missions. The first helicopter unit in the ground forces could deploy on its own or support other army RRUs. RRUs also received priority in training and would take part in the experiments that tested tactical concepts necessary for implementing the Local War doctrine. (At the same time, a small number of theoreticians in a few academic institutions began playing with concepts that later would become known as Information Warfare (IW), but these ideas did not receive much attention with all the other changes under way.)

Despite these dramatic changes in the military, defense budgets remained tight until the end of the 1980s. As the civilian economy expanded, the PLA was encouraged to help support itself through commercial activities in addition to maintaining its traditional sideline agricultural production and light industries. At first, most of the actual commercial activity was conducted by elements at higher headquarters, but gradually combat units also got into the act of running hotels and restaurants and performing other services. Transportation and construction engineer units hired themselves out to work on projects with no direct military application. Within a few years, perhaps twenty thousand PLA enterprises were in operation, but nobody knew the real numbers or how much

the so-called "PLA Inc." was earning, or losing. In the rush to reap profits, economic competition developed among PLA units and local governments and businesses. Some units became involved in smuggling operations. Graft and corruption spread. Profits were problematic. The PLA's participation in this sector of Chinese society was not turning out as expected.

These negative trends mirrored trends in the public at large and were one of the primary causes of the Tiananmen demonstrations in 1989. The PAP and civilian police force could not control the demonstrations to the satisfaction of the senior leadership, so the PLA was called in. The PLA's role in the massacre reshaped its role in society. After martial law in Beijing was lifted, efforts were necessary to restore the stature of the PLA in the eyes of the Chinese population. One method to increase its prestige was to increase its budget and purchase new equipment. At the same time, the demise of the Soviet Union provided the Chinese government an opportunity to spend some of the new money it now was willing to devote to the military for the purchase of advanced military hardware that the West had denied China since 1989. The implosion of the USSR also forced the PLA to reexamine the threats it faced.

Local War Under Modern High-Technology Conditions Prevails; Exploring the RMA

Many of the old soldiers in the PLA were not ready for the changes to be confronted in the early-1990s. No enemy, plus new doctrine, new organizations, new equipment, and a new role in society, complicated army life. Because of the traditional emphasis on the role of man over weapons, many older officers were not enthusiastic about the introduction of new technologies into the PLA even in relatively limited numbers.

The Gulf War forced a change in old attitudes. After watching the conduct of Desert Storm, many Chinese officers reluctantly accepted the viability of high technology on the contemporary battlefield. PLA theoreticians began modifying the term Local War by adding the phrase "Under Modern High Technology Conditions." The Gulf War was said to be an example of such a Local War Under Modern High Technology Conditions. New concepts and equipment demonstrated during the Gulf War campaign were studied. Units now had to be even more mobile, capable of extending their reach farther, and better prepared to work together as a joint army, navy, and air force team. By the middle of the decade, Local War Under Modern High Technology Conditions had become the dominant doctrinal thought in the PLA. At the same time, a few PLA thinkers expanded their study of other concepts of future

high-technology warfare, including Information Warfare, which became known under the rubric of the Revolution in Military Affairs (RMA).

Early in the 1990s, rumors and reports spread about another reduction in the size of the PLA. Numbers from two hundred thousand to seven hundred thousand were mentioned; several Group Armies were forecast to be eliminated. However, public announcement of the long-rumored reduction did not come until the 15th Party Congress in September 1997, when President and Chairman of the CMC Jiang Zemin announced that over the next three years another five hundred thousand personnel would be shed from the ranks. At the same time, the reserves and PAP would be expanded. What Jiang did not announce was the transfer of 14 PLA divisions to the PAP that had begun in late 1996.

The new reduction would not only eliminate whole units, many organizations that remained would become smaller. Missile, naval, and air force modernization would now precede modernization of the ground forces. Large numbers of older equipment in the air force and navy would be retired and not replaced. In the army, at least three group armies would be dissolved, and many if not all of the group armies that remained would lose a full division. Many divisions would be downsized into brigades. Emphasis in all services would be placed on transforming the PLA into a smaller, more technologically advanced force.

Ten months after the announcement of the five hundred thousand-man reduction, in July 1998, as part of the national campaign to fight smuggling and corruption, President Jiang ordered the PLA, PAP, and other security forces to divest themselves of their commercial enterprises. This order did not apply to traditional sideline agricultural production and some PLA factories, but was focused on the thousands of service industry enterprises that had sprung up in the past decade. With the strengthening of the PAP and the withdrawal from commercial enterprises, the PLA was returning to its more traditional primary role in society—defense from external threat.

However, the primary planning scenario for the PLA since the mid-1990s has not been to fight a traditional external enemy. Rather, in the late 1990s, preparation of military options and capabilities to assure that Taiwan does not seek independence has become the major focus of PLA operational planning. The possibility that the U.S. military may become involved in the defense of Taiwan is a worst-case factor that PLA planners also must consider. Taiwan's location allows for the capabilities applicable to scenarios for Local War Under Modern High Technology Conditions to be applied to it.

Overall, the relationship between doctrine and force structure as described above is summarized in Figure 1. For the past 20 years multiple doctrinal concepts have existed or been in development concurrently within the PLA. For example, in the late-1970s, People's War was the PLA's primary doctrine and People's War Under Modern Conditions was in the preliminary stage of development. By the mid-1980s, People's War Under Modern Conditions had become the primary doctrine; People's War still remained but could be termed a residual doctrine. At the same time, Local War was in its preliminary stage of development.

The size of the PLA and the manner in which its doctrine has changed over the past 20 years have resulted in the simultaneous existence of elements within the force with differing structures, missions, and doctrinal orientations. Even today many ground force units are still best suited for People's War operations to defend the Chinese mainland. Others, such as the RRU's, have modernized to the point that they are trained for a role in Local War Under Modern High Technology Conditions. A very few units, such as missile and electronic warfare units, are also beginning to develop capabilities suitable for twenty-first century RMA warfare in addition to being integral to Local War scenarios.

1978-85	PD	PL				Single Service Operations Field Armies
1985-88	RD	PD	PL			Joint Headquarters/ Operations Group Armies
1988-92		RD	PD	PL	PPL	Fist Units Rapid Reaction Units
1992-		RD		PD	PL	Smaller and Fewer Units More Hi-Tech
Legend: PW: People's War PD: Primary Doctrine PWUMC: People's War Under Modern Conditions PL: Preliminary Doctrine LW: Local War PPL: Pre-Preliminary Doctrine LWUMHTC: Local War Under Modern Hi-Tech Conditions RD: Residual Doctrine RMA: Revolution in Military Affairs						

Figure 1—The Relationship of PLA Doctrinal Developments to Force Structure

Foreign Writers Examine PLA Force Structure

Comprehensive Book-Length Studies

Because of the 20-year focus of this chapter, the works of Samuel B. Griffith, John Gittings, William W. Whitson, and Harvey W. Nelson were not examined. These scholars described the PLA from its beginning to the People's War phase of the late-1970s. Much of their information was based on interviews of prisoners of war, defectors, and various Chinese sources on Taiwan, as well Chinese military and political writings. But as a general rule, the PRC mainland was closed to them.

For the period in question, the first, and perhaps still the most comprehensive, full-length study of the PLA by a single author is Harlan Jencks' *From Muskets to Missiles: Politics and Professionalism in the Chinese Army, 1945–1981*.¹⁵⁴ Published in 1982, this book covered in depth everything from history to strategy to doctrine and force structure for the People's War PLA of the early 1980s. Significantly, this seminal work was based primarily on extensive scholarly research without the benefit of person-to-person interviews. Perhaps most important, however, Jencks' scholarship was honed by military and combat duty. This soldier-level experience allowed Jencks to consistently provide a level of analysis that few who have followed him have been able to match.

Jencks identified themes that are still relevant to the changes in today's PLA. In Chapter 5, which concentrates on force structure, Jencks:

- Emphasized the considerable variation that existed among the 37 corps and that even the classification of units as Type A, B, or C is an oversimplification (p. 148);
- Observed that if only a limited amount of modern weapons are available, "any attempt to 'spread it around' among different units would be extremely wasteful," as well as its corollary, "the less complex a weapon or piece of equipment is, the more evenly and widely it is likely to be distributed" (p. 148);
- Identified the importance of the regimental level, "the smallest self-sustaining combat formation capable of independent operations" (p. 149);

¹⁵⁴Harlan W. Jencks, *From Muskets to Missiles: Politics and Professionalism in the Chinese Army, 1945–1981* (Boulder: Westview Press, 1982).

- Judged that the PLA is “only beginning to develop doctrine and techniques which the Soviet, American, British, and German armies worked out during World War II” (p. 151);
- Noted that new ideas are not being tested, not only because of a lack of equipment, but because of the “apparent disinclination of some senior officers to try anything new” (p. 152);
- Determined that the three airborne divisions have little military justification and therefore serve as “a highly mobile ‘fire brigade’ force in the event of internal unrest or rebellion” (pp. 157–158);
- Predicted the creation of the PAP (pp. 178–179); and
- Accurately identified the successor to the 8341 Unit, the Central Guard Unit, as the 57003 Unit (p. 139).

Jencks described in depth the national and tactical structures, which are required for understanding of any force structure. He also made several other important organizational distinctions that are necessary for an understanding of the peculiarities of the Chinese armed forces, such as the role of the People’s Armed Force Departments and the separation of the civilian defense industries from the PLA, that would confound many journalists for years to come. (Despite the fact that many subsequent books and articles described the distinction between PLA enterprises and the defense industries, many journalists writing about the PLA still do not understand the fundamental differences between the two.) *From Muskets to Missiles* was published before the force reductions of the 1980s, so, unfortunately, the PLA force structure it described was out of date only a few years later. Even now, there is no other volume, written by a single author, that is as thorough and comprehensive. The academic community needs a year 2000 version of Jencks’ work that focuses on changes that have taken place since the mid-1990s.

In the years since the publication of his book, Jencks has been one of the most prolific and astute observers of the PLA and the Chinese defense industries. In June 1984, his “‘People’s War under Modern Conditions’: Wishful Thinking, National Suicide, or Effective Deterrent” updated many of the themes he wrote about in *From Muskets to Missiles*.¹⁵⁵ In that article he again emphasized the importance of “tailoring” tactical organizations according to specific missions, instead of the standard cookie cutter organization assumed by some writers. The article also was a forum for the wider dissemination of the Defense

¹⁵⁵Harlan W. Jencks, “‘People’s War Under Modern Conditions’: Wishful Thinking, National Suicide, or Effective Deterrent,” *The China Quarterly*, No. 98 (June 1984), pp. 305–319.

Intelligence Agency's John J. (Jay) Sloan's 1982 testimony to the Senate Foreign Relations Committee regarding the six major requirements for upgrading Chinese military capability (p. 317):

1. Improved weaponry
2. Improved training/unit readiness/education
3. Improved doctrine and tactics
4. Improved defense technology/production base
5. Improved logistical system
6. Improved organization/command and control

Jencks added "improved officer personnel system" to the list, but identified "improved organization/command and control," that is, force structure, as the most difficult of these requirements. Though the PLA has made significant strides in each of these sectors over the past 17 years, Sloan's observations are still pertinent to the challenges facing the PLA today. Through the 1980s and 1990s, Jencks' later articles continued to provide insightful analysis of developments in PLA force structure and weapons capabilities, as well as many other aspects of Chinese military modernization.

In the mid-1980s, Ellis Joffe's *The Chinese Army After Mao* provided an updated and slightly differing assessment of the many issues Jencks covered a few years earlier.¹⁵⁶ (In particular, he saw a more significant break in Chinese military doctrine between People's War and People's War Under Modern Conditions than did Jencks [p. 81].) Both Joffe and Jencks refer to the works of Jonathan Pollack when describing Chinese nuclear capabilities, assessing it to be a minimal deterrent force.

Though he did not go into the same level of detail as Jencks (such a degree of detail was not necessary for his book), Joffe made several useful observations about force structure. Joffe's insights demonstrate the relationship of force structure to the PLA's role in society, the threat to China, and the PLA's doctrine:

- . . . a military doctrine also has to determine the organizational structure, the weapons procurement policy, and the internal practices of the armed forces in line with the kind of war they are expected to fight. (p. 93)
- In 1981, Song Shilong, commandant of the Academy of Military Science, noted in contrast to traditional People's War, "it is insufficient to rely on

¹⁵⁶Ellis Joffe, *The Chinese Army After Mao* (Cambridge: Harvard University Press, 1987).

the infantry alone.” In future wars, China will employ ground forces—which means combined arms—and methods of fighting will have to change “because of development in weapons and technical equipment.” (pp. 80–81) (Song’s message followed Joffe’s introduction to the term “People’s War Under Modern Conditions” as defined by Su Yu in 1977.)

- The army can no longer be a combat force and a civic force. (p. 81)
- The threat of the Soviet navy to China’s shores inspired the plan that envisioned the development of an ocean-going navy. (pp. 90–91)
- In the late-1970s, the “army in sneakers” was an “unarmed giant.” (p. 95)
- “While it is the duty of military planners to imagine the unimaginable, it is also their duty to distinguish between the essential and expendable.” (p. 117) (This sentence would be an appropriate motto for any force planner constrained by limited funding.)
- “A smaller and leaner army will have even less time and taste for non-military pursuits.” (p. 157) (This statement is a trademark of Joffe’s concept of military professionalism. As PLA Inc. grew, many elements of a still-bloated military were tempted to take part in questionable business activities. When the entrepreneurial army spread from higher headquarters to combat units, the leadership in Beijing initiated efforts to stop the growth of this cancer on its professionalism.)

Joffe pointed out the time lag between the initiation of reforms and their impact (p. 148). Though members of the PLA may write and talk about changes and reforms, the actual implementation of these ideas usually takes several years and undergoes several rounds of experimentation before they can be judged effective. The same can be said for the acquisition of new equipment and its impact on force effectiveness. Too many journalists and “analysts” do not understand the significance of this time lag in military modernization and underestimate the practical difficulties that accompany any major transformation in such a large, conservative organization. Other scholars have provided pithy commentary to emphasize the reality that Joffe identified. David Shambaugh often reminds us, “It is important not to confuse ambition with capability.” With reference to equipment acquisition, so does Bates Gill in his comment about the conclusions drawn by the Cox report on Chinese espionage activities and technology transfer to China, “It confuses acquisition with capability, period.”

Another of the PLA watchers who has been both prolific and insightful over the past 20 years is Paul H. B. Godwin. His full-length study of the PLA, *The Chinese Communist Armed Forces*, published in 1988, contains comprehensive analysis of the PLA as it was transitioning to accommodate the doctrine of People's War Under Modern Conditions.¹⁵⁷ As Godwin handed a copy to me in the year of its publication, he somewhat wistfully said that it should have the subtitle "From 1927 to 1985." The book's information cutoff date was mid-1985 and though Godwin was able to capture the reduction of military regions from 11 to 7, he was not able to include the million-man reduction and the effects it had on the PLA's force structure.

The delay between research and publication continues to haunt the field and often inhibits the layperson from obtaining adequate analysis of the implications of force structure and other changes in the PLA. As a result, many non-PLA specialists, who attempt to do detailed research on the PLA, get an out-of-date understanding of the Chinese military. The most recent example of this is Nan Li's article entitled "Organizational Changes of the PLA, 1985-1997," which appears in the June 1999 edition of *The China Quarterly*.¹⁵⁸ Though the article contains excellent data for the time frame defined, appearing as it does nearly two years after the announcement of the five hundred thousand-man reduction, Nan Li does not discuss the changes that have most recently occurred and are essential to understanding the current state of the PLA.

Government Studies

In November 1984, the Defense Intelligence Agency (DIA) published the *Handbook of the Chinese People's Liberation Army*.¹⁵⁹ It is detailed and comprehensive, but relatively unanalytical. It is useful for the facts, "just the facts," as they existed at that time. The *Handbook* devotes only a few sentences to the reductions of the early-1980s. Its organizational charts, which provide Tables of Organization and Equipment (TO&E), are for the same force structure Jencks had previously described. Although an update of the *Handbook* would be a valuable contribution given today's public interest and misunderstanding of the PLA, it is unlikely that the DIA will once again undertake such a task because of time, money, and personnel limitations.

¹⁵⁷Paul H. B. Godwin, *The Chinese Communist Armed Forces* (Maxwell Air Force Base, Ala.: Air University Press, 1988).

¹⁵⁸Nan Li, "Organizational Changes of the PLA, 1985-1997," *The China Quarterly*, No. 158 (June 1999), pp. 314-349.

¹⁵⁹United States Defense Intelligence Agency, *Handbook of the Chinese People's Liberation Army* (Government Printing Office: Washington, D.C.: 1984).

In 1988, the Library of Congress published *China: A Country Study*.¹⁶⁰ The chapter on national defense was written by Roxane D.V. Sismanidis with information up to 1987. Its 50 or so pages are a good example of what can be done in a general overview. Naturally, it draws on many of the specialist works examined in this chapter. Her study covers the million-man reduction, the decrease in military regions from 11 to 7, and the concept of People's War Under Modern Conditions. It does not mention the development of Local War doctrine, but does include a reference to the formation of group armies. The reduction to 24 group armies had not been completed and was not foreshadowed in the analysis. An update to this authoritative government work also would be useful.

The Library of Congress' Congressional Research Service has also provided an important contribution to the understanding of the Chinese military. Shirley Kan's series on Chinese missile forces has been one of the best sources of information on China's strategic forces and its cruise missile capabilities.¹⁶¹ Kan's works are highly respected by members of Congress and often used by others as source material.

In 1995, the General Accounting Office issued a study on the PLA entitled, *National Security: Impact of China's Military Modernization in the Pacific Region*.¹⁶² The study did not seem to receive too much attention, perhaps because, as noted by David Shambaugh in his introduction to *The China Quarterly*'s June 1996 edition on "China's Military in Transition," it was considered to be too dismissive of China's military capabilities.¹⁶³ At the time of its publication and since then, anything perceived as understating the strength of the Chinese military has been a politically incorrect line of analysis.

The annual *Directory of PRC Military Personalities*, first produced in the mid-1980s by the U.S. Defense Liaison Office in Hong Kong and subsequently in the late-1990s by SEROLD Hawaii, Inc., has been an extremely useful and comprehensive series.¹⁶⁴ These books are an important source of biographic data on PLA leaders from the CMC down to division and, at times, the

¹⁶⁰United States Federal Research Division, Library of Congress, *China A Country Study* (Government Printing Office: Washington, D.C.: 1988).

¹⁶¹Shirley Kan, *China: Ballistic and Cruise Missiles* (Washington, D.C.: Congressional Research Service, 1998). Kan updates this report as developments occur.

¹⁶²United States General Accounting Office, *National Security: Impact of China's Military Modernization in the Pacific Region* (Washington, D.C.: U.S. Government Printing Office, 1995).

¹⁶³David Shambaugh, "China's Military in Transition, Politics, Professionalism, Procurement and Power Projection," *The China Quarterly*, No. 146 (June 1996), pp. 265-266.

¹⁶⁴USDLO Hong Kong, *Directory of PRC Military Personalities*, published annually through 1996 and then by SEROLD Hawaii Inc. from 1997 on.

regimental level. They also contain a wealth of order-of-battle and organizational data for analysts willing to spend the effort to examine them closely. For example, the series contains designations and locations for all group armies, many divisions, and some brigades or regiments.

Over the past three years, the Congress has tasked the Defense Department to answer specific questions or produce limited studies about the PLA. The unclassified responses have "answered the mail" and, indeed, have included useful information. However, probably because of sensitivity over releasing classified information, they have not been as comprehensive as possible. Nevertheless, any researcher attempting to understand the current status of the PLA should make the effort to consult them for an official U.S. government evaluation.

Specialized Works—General Reference

The International Institute for Strategic Studies in London produces the annual *Military Balance*. This is a standard reference for numbers and types of equipment and some organizational data. However, Harlan Jencks notes that the *Military Balance* tends to provide "high-side" counts and repeat what was reported the previous year unless a spectacular event or scholarly consensus forces it to change.¹⁶⁵

The series of Jane's publications, consisting of its encyclopedic books on weapons systems and several periodicals, is another standard source for force structure and equipment developments. Many times individual facts, or rumors, are reported soon after they occur without much analysis. However, there is usually at least one major report per year that summarizes recent developments and provides a degree of analysis.

Several Western and Hong Kong newspapers have a good record on reporting on major PLA force structure changes and the introduction of equipment. Quality of reporting depends upon the journalists in the field and often varies as journalists rotate. Editorial staffs, however, often distort reports by the headlines they add or information they cut. Researchers must also be aware of editorial biases of some newspapers, which often affect the content of stories. Many newspapers sporadically provide a forum for academic and government analysts to provide some depth and context to routine reporting. However,

¹⁶⁵Harlan W. Jencks, "Wild Speculation on the Military Balance in the Taiwan Strait," in James R. Lilley and Chuck Downs, eds., *Crisis in the Taiwan Strait* (Washington, D.C.: American Enterprise Institute and National Defense University Press, 1997), p. 139.

except for the few occasional opinion pieces, most scholarly work is found in books and journals with relatively limited distribution.

Before moving on to specific articles and books, it is appropriate here to mention the unparalleled work of retired U.S. Army Sergeant Ellis Melvin. In his retirement, Melvin has pursued the hobby of systematically reading many mainland Chinese-language newspapers. His understanding of the Chinese language and military organization has allowed him to compile detailed information on PLA force structure and operations that would otherwise be unavailable to the general public. Though he does not publish any of his work, Melvin graciously shares much of the fruits of his labor with several academic and government analysts, thus adding a special depth to their analysis. Melvin's quiet, behind-the-scenes efforts are highly regarded by specialists who are indebted to him for his untiring and unselfish contribution to PLA studies.

Since it deals with gross personnel numbers, a good starting point for specialized articles dealing with the PLA force structure is Yitzhak Shichor's "Demobilization: The Dialectics of PLA Troop Reductions."¹⁶⁶ Shichor walks the reader through the numerous expansions and contractions of the PLA's personnel strength from the 1950s to the mid-1990s. He notes the discrepancies in numbers reported to have been demobilized in the 1980s, stating "it is unclear whether the cut of one million military personnel announced in 1985 includes or excludes the more than half a million troops collectively demobilized since 1982" (p. 346). The half million demobilized after 1982 included the Railroad Construction Corps, the Capital Construction Corps, the Xinjiang Production and Construction Corps, and those units that became the first elements of the PAP. Interestingly, he claims that in 1994 and 1995, the PLA could have been much larger than the 3.2 million assessed at the time. Later, Shichor probably relies too much on "reports" that nearly all of the soldiers demobilized from 1986 to 1992 were transferred to the PAP. In fact, new PAP troopers are drawn from the same conscription pool that supplies the PLA. Based on a Hong Kong report, Shichor also predicts that by 1997 the PAP will number 1.8 million (p. 354). This figure appears to be too high even after the 1996 transfer of PLA units. (We will return to the problem of the PAP later.) Still, Shichor's work is useful for identifying the major periods of demobilization, even though, as he admits, the exact numbers are questionable.

¹⁶⁶Yitzhak Shichor, "Demobilization: The Dialectics of PLA Troop Reductions," *The China Quarterly*, No. 146 (June 1996), pp. 336-359.

Analysis of PLA Personnel and Party Systems

In the early-1980s, as China opened to the outside, more scholars and soldiers had increased direct access to PLA officers and increased, but limited, access to military units. This level of access added a new dimension to analysis that previously had been based primarily on academic research. For the time span currently under review, the U.S. military officer who set the standard for other military officers to follow in combining true academic excellence with on-the-ground experience is Monte Bullard.¹⁶⁷

Bullard's *China's Political-Military Evolution: The Party and the Military in the PRC, 1960-1984*, published in 1985, broke new ground in methodology and content.¹⁶⁸ Bullard used personal interviews with members of the PLA during his attaché duty in China and Hong Kong to build on his superb scholarly research. His main theme is the rise and fall of the interlocking directorates, which linked the PLA to all levels of government in China before, during, and after the Cultural Revolution. One section of the book describes the PLA of the early-1980s, in the midst of the reforms which removed the Railroad Construction Corps and the Capital Construction Corps from military control. Another section provides an in-depth description of the political commissar system. Some researchers without a military background may find Bullard's work difficult because he assumes the reader is familiar with the basic military organizations of the PLA.

During his discussion of demobilization, Bullard provides details about a category of active duty PLA personnel called advisors. In *From Muskets to Missiles*, Jencks also mentioned advisors and described the "delicate handling of older cadre" who have been relieved of their duties because of "advanced age or ill health" (p. 231). Jencks did not specifically identify them as active duty personnel, but said they could be found "as low as regimental level." Bullard specified their active duty status and added a few more details, along with one bit of data that conflicts with Jencks:

The advisor category is not considered a form of retirement by the Chinese. Cadre who become advisors are considered active duty personnel and receive pay and privileges accordingly. They are kept on to provide their experience to the PLA. Advisors are

¹⁶⁷U.S. Air Force Colonel Richard Latham performed a similar function with regard to Chinese defense industries.

¹⁶⁸Monte Bullard, *China's Political-Military Evolution: The Party and the Military in the PRC, 1960-1984* (Boulder: Westview Press: 1985).

assigned to military related institutes or schools rather than the field forces. There are some located at senior headquarters (military district and military region), but none are assigned to the regular field forces. (p. 34)

With the restoration of ranks in 1988, many of the personnel in the advisor category appear to have evolved into the *wenzhi ganbu* that exist today. *Wenzhi ganbu* are active duty PLA civilians who perform specialist and technical functions as Bullard describes. In addition to schools and headquarters, they also are prevalent in hospitals and medical units. They are roughly the equivalent of U.S. Department of Defense civilians; however, U.S. civilians working for the military *are not* considered active duty personnel and are therefore not included in active duty personnel strength statistics. China's 1998 White Paper on National Defense officially acknowledged the status of *wenzhi ganbu* for the first time and noted they were indeed considered active duty personnel, unlike in other armies.¹⁶⁹ The White Paper did not give numbers or percentages of *wenzhi ganbu* in the force. However, according to PLA sources, they could comprise 20 to 25 percent of the PLA's active duty strength.¹⁷⁰ (U.S. civilians working for the military would add another 50 percent to personnel strength if counted using Chinese methodology.)

For the bean counters, the importance of the status of *wenzhi ganbu* to force structure is that the PLA could actually be considered significantly smaller than their strength figures imply. Though a few other writers have mentioned the category of PLA civilians, the implication of them being considered active duty personnel has rarely, if ever, been considered. This discrepancy in accounting makes the PLA appear to be larger than it actually is compared to other militaries. (China may consider this ambiguity as acting in its favor because of the deterrent value of a large military and therefore is hesitant to release actual numbers of *wenzhi ganbu*.)

Michael Swaine's 1992 *The Military & Political Succession in China* is another specialized book-length work that combines superb scholarship with extensive personal interviews.¹⁷¹ Swaine focuses on personalities and factions to update William W. Whitson's 1973 *The Chinese High Command*. In doing so, Swaine provides a detailed analysis of the PLA command and control structure that evolved after the million-man reduction of the mid-1980s. His chart of "Chinese Military Regions, Districts, and Headquarters of Group Armies" is one

¹⁶⁹Information Office of the State Council of the People's Republic of China, *China's National Defense*, July 1998.

¹⁷⁰Conversation with the author and PLA civilian, September 1996.

¹⁷¹Michael Swaine, *The Military & Political Succession in China* (Santa Monica: RAND, 1992).

of the most useful illustrations of Chinese force structure in the existing literature (p. 252) (though the headquarters of several group armies have been eliminated or relocated since its publication). Other sources, such as the *Directory of PRC Military Personalities*, contain the same information, but not in such an accessible, easy-to-use format.

The details of the command and control relationships in PLA forces could not have been derived in such depth but for Swaine's access to PLA officers (pp. 78–152). The author also examined the relationship of the PAP to the PLA, a question of increased importance as the PAP underwent major changes in the aftermath of Tiananmen (pp. 85–86 and 127–133). Swaine foreshadowed the growing problem of military enterprises that would eventually lead to the 1998 decision for the PLA to divest itself of its commercial entities: "this separation of the military system from the Party-state apparatus has led to an increase in competitive (rather than cooperative) economic behavior on the local level" (p. 149).

Swaine used the reporting of the *Far Eastern Economic Review's* Tai Ming Cheung as a basis for some of his analysis. In the late-1980s and early- to mid-1990s, Cheung made significant contributions to the West's understanding of the PLA, military enterprises, and the PAP in an important body of work published by the *Review* and by his contributions to scholarly journals and academic conferences. Cheung's insights, too, relied heavily on access to Chinese military personnel and a detailed reading of military and PAP publications.

PLA Air Force

Ken Allen's specialized work on the PLA Air Force (PLAAF) epitomizes the kind of analysis that can result from an examination of force structure in its most minute detail. Allen's 1991 *People's Republic of China People's Liberation Army Air Force*, published by the DIA,¹⁷² and his 1995 collaboration with Jonathan Pollack and Glenn Krumel, *China's Air Force Enters the 21st Century*,¹⁷³ set new standards for the analysis of force structure and implications for military modernization. Allen's 1991 work provides many of the facts which form the basis for the 1995 analysis. Allen combined a detailed examination of Chinese publications with personal interviews and real-world military experience to

¹⁷²Kenneth W. Allen, *People's Republic of China People's Liberation Army Air Force* (Washington, D.C.: Defense Intelligence Agency, 1991).

¹⁷³Kenneth W. Allen, Jonathan Pollack, and Glenn Krumel, *China's Air Force Enters the 21st Century* (Santa Monica: RAND, 1995).

produce a book that many *Chinese* use as a reference to learn about their own air force.

Allen discusses every aspect of the PLAAF in exquisite detail. His use of charts to show changes and trends in aircraft inventory is both innovative and informative. The decline in absolute numbers of aircraft in the coming years is striking and often overlooked by other writers as a few newer aircraft enter the force. Allen describes the long time span between design, prototype, and production that limits the amount and sophistication of domestically produced aircraft entering the PLAAF inventory. He dutifully recounts the numerous reports of foreign acquisitions, but properly questions the credibility of the sources (pp. 156–161). Allen's skepticism of "reports" of foreign acquisition finds company with the analysis of Bates Gill, Taeho Kim, John Frankenstein, Paul Godwin, and others. *China's Air Force Enters the 21st Century* predicts a much smaller, but more technologically advanced PLAAF that lags considerably behind modern air forces well into the twenty-first century.

China's Air Force Enters the 21st Century is updated in Allen's "PLAAF Modernization: An Assessment," found in *Crisis in the Taiwan Strait*, which provides an assessment of the Su-27 activity during the March 1996 exercises.¹⁷⁴ Also of interest are his estimates (Table 2 on page 244), which project aircraft production out to 2010. Allen's estimates demonstrate the problems in predicting Chinese defense industry production rates. Writing in 1996, Allen forecast the production of ten Su-27s in 1998. The actual number of Su-27 aircraft assembled from kits in 1998 was two. This is but one example that shows many predictions of production rates and "reports" of arms sales eventually come true, but often at a significantly slower pace and at a later date than originally foreseen.

PLA Navy

Over the past 20 years, two of the earliest books that specialized in one aspect of the PLA focused on the navy: David G. Muller's *China as a Maritime Power* and Bruce Swanson's *Eighth Voyage of the Dragon*. Later writers frequently referred to both these works. However, because of doctrinal and force structure changes over the past two decades these works are now most useful for their historical perspectives.

¹⁷⁴Kenneth W. Allen, "PLAAF Modernization: An Assessment," in James R. Lilley and Chuck Downs, eds., *Crisis in the Taiwan Strait* (Washington, D.C.: American Enterprise Institute and National Defense University Press, 1997), pp. 217–247.

Since the mid-1990s, Eric McVadon, a former U.S. defense and naval attaché to China, has produced several excellent articles on the PLA. His "PRC Exercises, Doctrine and Tactics Toward Taiwan: The Naval Dimension" uses force structure, along with training and doctrine, to analyze several scenarios for the use of force against Taiwan.¹⁷⁵ He notes that the PLA Navy has not "undertaken a major building program to provide the capability to invade a well-defended Taiwan" (p. 252). Rather, the PLA's acquisition of M-9 missiles, SA-10 surface-to-air missiles, and Su-27 fighters "confirms the PLA wants to be able to terrorize Taiwan and keep Taiwan's forces from being able to strike China" (p. 256). His comparison of selected PLA and Taiwan naval forces (Table B) makes an important distinction that most bean counts do not: McVadon distinguishes between "front-line, capable, and obsolescent" ships and craft (p. 258). These distinctions put a different perspective on balances that compare only gross numbers. Few journalists and other writers are as qualified as McVadon, who has seen the forces on both sides of the Strait, to make such distinctions. (McVadon's assistant while in Beijing, John Caldwell, has also used his extensive experience in the U.S. Marine Corps to assess PLA capabilities. See Caldwell's "China's Conventional Military Capabilities, 1994–2000: An Assessment."¹⁷⁶)

In March 1996, Christopher D. Yung, an analyst at the Center for Naval Analyses, examined whether, by 2010, China could build, buy, or reverse engineer a modern, regional navy.¹⁷⁷ Yung concluded that:

- China cannot build a regional navy by 2010 without foreign participation or assistance because of shortfalls in the Chinese defense industries (p. 27);
- China can buy the *inventory* for a regional navy by 2010 if economic conditions permit, but the Chinese leadership is *not* likely to purchase a regional capability directly because it would be inconsistent with the history of modern Chinese defense development and require that China become dependent on other countries for its force requirements (p. 36); and
- China's most likely course is the process of reverse engineering a modern military, but it is impractical for China to reverse engineer a

¹⁷⁵Eric McVadon, "PRC Exercises, Doctrine and Tactics Toward Taiwan: The Naval Dimension," in James R. Lilley and Chuck Downs, eds., *Crisis in the Taiwan Strait* (Washington, D.C.: American Enterprise Institute and National Defense University Press, 1997), pp. 249–276.

¹⁷⁶John Caldwell, *China's Conventional Military Capabilities, 1994–2000: An Assessment* (Washington, D.C.: Center for Strategic and International Studies, 1994).

¹⁷⁷Christopher D. Yung, *People's War at Sea: Chinese Naval Power in the Twenty-First Century* (Alexandria, Va.: Center for Naval Analyses, 1996).

regional navy by 2010. The Chinese defense industry takes an average of 15 years to reverse engineer imported weapons; therefore, the goal of reverse engineering a regional navy *by 2020* is achievable and suits Chinese foreign policy purposes. (p. 51)

Yung outlines the following U.S. policy-related implications:

- Military and policy planning that assumes China's navy will dominate the region or represent a threat to U.S. forces in the Asia-Pacific region is premature.
- Defense planning projections that account for a regionally oriented Chinese navy by about 2020 are probably more accurate.
- Hedging for a future Chinese regional navy may be a good long-term insurance, but sizing today's forces for an up-and-coming Chinese naval threat by 2010 would be premature.
- Under the most pessimistic planning scenario, which includes high Chinese economic growth and a willingness to purchase a regional naval capability from other countries, by 2010 China might be able to back up its strategic objectives in the Asia-Pacific region with significant military force. (pp. 52–53)

Yung includes several tables that posit various inventories of ships according to the scenarios he examines. A useful subject for future studies of the Chinese navy and air force would be an examination of the numbers and types of equipment that would be necessary for specific scenarios. For example:

- How many and what type of destroyers, frigates, submarines, support ships, and so forth, would be required to blockade a port in Taiwan for a month;
- How many and what type of destroyers, frigates, amphibious vessels, submarines, support ships, and so forth, would be required to assault an island in the Spratly group; and
- How many and what type of aircraft, fighters, bombers, aerial refuelers, command and control aircraft, electronic warfare aircraft, and so forth, would be required to provide adequate air cover to these operations.

Studies of this sort would be useful to help estimate potential capabilities as new equipment enters the PLA. However, it also will be necessary to determine which units receive the new equipment, do they have the infrastructure to maintain them, and whether the crews receive adequate training to operate the new equipment to its design potential. The answers to these questions require

more information than is normally available to most researchers. However, this kind of information is necessary to make assessments that go beyond mere "bean counting."

Strategic and Missile Forces

Chinese nuclear capabilities are among Beijing's most highly guarded secrets. Little verifiable, detailed information is publicly available. However, there are a few sources of data on Chinese strategic missile and nuclear forces. Basic information on force structure can be found in:

- *Nuclear Weapons Databook Volume V, British, French, and Chinese Nuclear Weapons*, by Robert S. Norris, Andrew S. Burrows, and Richard W. Fieldhouse, a book by the Natural Resources Defense Council, 1994, which includes detailed descriptions of the development of the nuclear weapons program and individual strategic missiles;
- *Taking Stock of Worldwide Nuclear Developments 1998*, by William S. Norris, Robert S. Norris, and Joshua Handler, Natural Resources Defense Council, 1998, which provides detailed information about location and types of Chinese strategic forces (p. 89);
- Several Congressional Research Service (CRS) Issue Briefs on Chinese missile and nuclear forces by Robert Sutter and Shirley Kan; and
- The numerous works of John W. Lewis and his collaborators, Xue Litai and Hua Di.

Over the past 20 years, Bonnie Glaser, Banning Garrett, Harlan Jencks, Chong-pin Lin, and Alastair Iain Johnston have all added the results of personal interviews to the analysis of basic data to forecast trends in the Chinese nuclear force. The latest entrant to this field is Ming Zhang, whose *China's Changing Nuclear Posture* was published by the Carnegie Endowment for International Peace in 1999.¹⁷⁸ Unlike most other analysts who credit China with a "minimal deterrent" force, Zhang attributes the Chinese nuclear force with the ability to provide "limited nuclear deterrence," which he defines as "sufficient forces to launch a retaliatory strike after an adversary's nuclear attack" (pp. 5-6). This definition is closer to that of "minimal deterrence" than "limited deterrence," which requires a degree of warfighting capability directed at the enemy's strategic nuclear forces.

¹⁷⁸Ming Zhang, *China's Changing Nuclear Posture* (Washington, D.C.: Carnegie Endowment for International Peace, 1999).

There has been considerable discussion about whether China's strategic arsenal provides "minimal deterrence" or "limited deterrence." Iain Johnston's "Prospects for Chinese Nuclear Force Modernization: Limited Deterrence Versus Multilateral Arms Control" and "China's New 'Old Thinking'" provide a convincing argument that some Chinese strategists believe a limited deterrence doctrine, which would require a larger mix of more accurate and modern missiles, might better serve China's operational and security interests than existing force levels.¹⁷⁹ According to Johnston, China has the capacity to increase the size of its strategic force by two to three times, but *no decision to do so* has yet been made by the senior Chinese political and military leadership. In 1996, Johnston warned that American plans for theater missile defense (TMD) deployment and a ballistic missile defense (BMD) system may have "counterproductive unintended consequences" by encouraging the ascent of proponents of limited deterrence in the PLA (*The China Quarterly*, p. 574). This insight into the potential growth of Chinese strategic systems continues to deserve close attention as the United States plans the manner in which it develops and eventually deploys missile defense systems.

The most detailed strategic order-of-battle data for the Chinese missile forces can be found in a few pages of Mark Stokes' much larger study entitled "China's Strategic Modernization: Implications for U.S. National Security."¹⁸⁰ Stokes provides organizational information for the Second Artillery's 6 bases and 13 brigades, as well as unit designations, locations, types of missiles, and potential targets (pp. 59–61). The majority of his study focuses on the civilian aerospace and electronics industries' organizations, research and development efforts, and strategic modernization projects. It also contains an extensive list of aerospace and electronics industries, factories, and research institutes.¹⁸¹ Stokes' work provides an essential foundation to assess China's endeavors to achieve a Revolution in Military Affairs.

Forecasting on the growth of China's strategic forces has been problematic over the past two decades. Both academic and government analysts have usually overestimated the growth rate of the Chinese missile force. George Washington

¹⁷⁹Alastair Iain Johnston, "Prospects for Chinese Nuclear Force Modernization: Limited Deterrence Versus Multilateral Arms Control," *The China Quarterly*, No. 146 (June 1996), pp. 548–576, and "China's New 'Old Thinking': The Concept of Limited Deterrence," *International Security*, Vol. 20, No. 3 (Winter 1995/1996), pp. 5–42.

¹⁸⁰Mark A. Stokes, *China's Strategic Modernization: Implications for U.S. National Security*, draft FY 97 research project under the auspices of the USAF Institute for National Security Studies, October 1997 (revised July 1998).

¹⁸¹Some organizational changes to the aerospace and electronics industries have occurred since Stokes' revision in the course of yet another reorganization of the Chinese civilian defense industries.

University's National Security Archive has posted on the worldwide web a previously classified DIA "Estimative Brief" from April 1984 that provides a forecast of the growth of the Chinese missile force as foreseen at that time.¹⁸² Listed below are the DIA estimates for 1994 (ten years after the date of the original document), as well as the number of missiles deployed in 1998 as reported by the CRS:

Missile	Type	DIA Estimate for 1994	CRS 1998 Report ¹⁸³
CSS-2 (DF-3A)	MRBM	120 ¹⁸⁴	40+
CSS-3 (DF-4)	ICBM	32	10-25
CSS-4 (DF-5A)	ICBM	16	20
SLBM (JL-1)		48	12
Solid ICBM		2	None
MR/IRBM Follow-on		28	10
(assumed to be the CSS-5/DF-21)			
SRBM		12 ¹⁸⁵	Approximately 120 ¹⁸⁶
Follow-on systems (unspecified)		30	None

In all but two cases, the number of missiles actually deployed is significantly lower four years *after* the date estimated by the DIA. Military planners often make worst-case assumptions in order to guarantee a margin of safety for their own forces, but it would appear that overestimation of Chinese production capacity is a common occurrence among many government and non-government analysts. For example, in the 1980s, there were several predictions that the Chinese ballistic missile fleet would expand to anywhere from four to ten boats. Obviously, these predictions have not come true as the single *Xia* remains tied up in port, rarely going to sea.

This is not to say, however, that the Chinese have not enjoyed any numerical gains in their missile industry. Over the past decade, there has been a *gradual* increase in the size of the strategic missile force and a *significant* increase in the number of short-range ballistic missiles. Newer missiles and warheads are more technologically advanced, as should be expected in any modernization

¹⁸²Defense Intelligence Agency, Defense Estimative Brief, "Nuclear Weapons Systems in China," 24 April 1984, declassified and found at <http://www.seas.gwu.edu/nsarchive/news/19990527/01-01.htm>. This one estimate should not be considered *the* single authoritative estimate of China's nuclear forces. Other elements of the government made similar estimates, which may or may not have agreed with the DIA's analysis.

¹⁸³Kan, *China: Ballistic and Cruise Missiles*, p. CRS-3.

¹⁸⁴The sale of approximately 36 CSS-2 missiles to Saudi Arabia in 1984 could not be foreseen at the time of this estimate. However, even subtracting the number sold to the Saudis, the DIA's estimate was still about twice as big as the actual number of missiles deployed in 1998.

¹⁸⁵These 12 missiles were assessed to be armed with nuclear warheads.

¹⁸⁶Taiwan Defense Minister Tang Fei provided this number. All SRBMs deployed by China currently are assessed to be armed with conventional warheads, but *capable* of being fitted with a nuclear warhead.

program. While the remainder of the PLA is getting smaller but qualitatively better, missile forces appear to be getting larger *and* qualitatively better. However, as Ken Allen reminds us, any significant increase in the number of deployed strategic missiles will require a commensurate growth in the force structure. Expansion of the force structure, which will entail building new facilities and training additional personnel on new systems, probably will be detectable long before new missiles are actually deployed.

Richard Fisher of the Heritage Foundation has been monitoring the growth and improvement of Chinese missiles as well as purchases of foreign equipment for much of the 1990s. In a series of articles, Fisher has compiled an extremely comprehensive list of reported foreign equipment acquisitions and other equipment developments.¹⁸⁷ His lists are meticulous in capturing the state of negotiations, that is, rumored or reported, ongoing, completed, or equipment delivered, for many systems from many countries, but primarily from Russia. As a reference they can be invaluable for their thoroughness. Fisher tends, however, in his analysis to project that “if” a transfer or weapons upgrade occurs, then something “could” or “would” result, which usually ends up in a worst-case scenario. With the number of deals allegedly in motion, indeed if they all were completed, a different PLA than the one currently in existence would result, also at a much higher rate of military spending. However, experience has proven that only a small proportion of the reported Chinese deals with foreign sources actually come to fruition, and, to date, in numbers that have not appreciably altered the military balance in the region. Nevertheless, Fisher reminds us that vigilance in monitoring these developments is essential. Trends of the past could be broken should Beijing perceive a major change in its strategic environment and a greater near-term threat to Chinese security.

Shorter Articles and Chapters in Books

Wortzel also described the Chinese National Defense University’s Pan Zhenqiang’s “anthill” theory of Chinese defense doctrine—leave the anthill alone and there is no problem, but kick it and millions of ants of the PLA will come spilling out (p. 158). He concludes that the anthill theory applies “when judging the PLA’s capabilities over short distances,” such as against its immediate land neighbors and Taiwan (p. 173). This image is appealing to non-China specialists because it fits many preconceived notions about China’s size

¹⁸⁷For example, see the Appendix for “How America’s Friends Are Building China’s Military Power,” *The Heritage Foundation Background*, 5 November 1997.

and threat potential. Later, another China specialist will offer another animal analogy that presents a completely different image of the PLA.

Fortunately, in the same volume as the Taylor and Kim article is Paul Godwin's "China's Security Policy Enters the 21st Century: The View from Beijing," in which Godwin discriminates between actual sales and "reports" of sales.¹⁸⁸ Godwin goes on to describe other developments in weapons acquisition and concludes that "these slowly emerging capabilities have been observed in the context of what is seen as assertive, if not aggressive, policies toward all issues involving Chinese sovereignty" (pp. 49-52).

Early on he emphasizes the subordination of military modernization to national economic development and says that Beijing's strategy "is to buy time for increasing China's military potential, which is slowly improving its capacity to be a stronger military power" (p. 4).

Because the PLA has been, and is expected to remain, under-resourced, the impact on force structure can be seen in it:

- Compensating for lack of funding by working to develop "the capability to control sea lines of communication, project regional force, and deter the United States and other potential adversaries in creative ways without matching forces" (p. 7).
- "Putting together smaller building blocks of forces, perhaps of brigade instead of division size, that are fully trained. Instead of seeing fully digitized divisions...the PLA may build up smaller units of highly educated soldiers and officers to support main force armies.... But every Group Army may not need such a capability" (p. 12).
- Not having "a naval construction effort underway that would give China the potential to decisively project sea power" (p. 16).

Appropriately, Wortzel also concludes that "notwithstanding all of the obstacles China faces, China's military potential bears watching" (p. 22).

There appears to be a definite change in tone between Wortzel's two articles. The first was written three to four years after his first tour in China as an army attaché from 1988-1990, while the second was written only one year after his second tour in Beijing from 1995-1997. His conclusions following more recent exposure

¹⁸⁸Paul H. B. Godwin, "China's Security Policy Enters the 21st Century: The View from Beijing," in Dianne L. Smith, ed., *Asian Security to the Year 2000* (Carlisle Barracks, Pa.: U.S. Army War College Strategic Studies Institute/Center for Strategic and International Studies, 1996), pp. 37-64.

exposure to the PLA seem to have moderated from previous years. In the later article, Wortzel puts more emphasis on the long-term nature of PLA modernization, whereas non-China specialists are more prone to accelerate the perceived pace to better fit their own needs. Often, the farther away from China an observer is (or with less current first-hand knowledge), the more formidable the PLA seems. Unless, as Wortzel reminded me during a conversation about his articles, they are trampling over you (i.e., the "ant hill" analogy from his 1994 *Orbis* article).

In a brief aside, Wortzel mentions the PAP's strength to be 800,000. The size of the PAP remains an unanswered question, especially now as it is being enlarged by the transfer of entire PLA units. An examination of the locations of the 14 divisions recently transferred from the PLA to the PAP, as listed in the 1998 volume of the *Directory of PRC Military Personalities*, indicates four are located within approximately a day's drive of Beijing and three within a day's drive of Shanghai. The others are found in border areas (Xinjiang and Yunnan) and near population centers in the interior. The concentration of new PAP units near China's most important cities, large urban areas, and border regions supports Wortzel's observation "When the Chinese military and civilian leaders say that their priority is economic growth and stability, they mean it" (p. 6).

With regard to domestic stability, over the years, Tai Ming Cheung has created a comprehensive body of work on the PAP that provides excellent detail about its structure. See, for example, "The People's Armed Police: First Line of Defense," in the *China Quarterly*.¹⁸⁹ Hong Kong's China News Analysis, "The People's Armed Police,"¹⁹⁰ also provides basic organizational data, which, like Cheung's work, is based on analysis of mainland sources. James Mulvenon's "The Sword and the Shield: Military Control of the People's Armed Police, 1995-1997" is very useful in its examination of the PAP's command relationship with the Central Military Commission, PLA General Staff Department, and Ministry of Public Security.¹⁹¹

Alfred D. Wilhelm, Jr. is another former U.S. military attaché who combines scholarship with operational experience and an intimate personal knowledge of the PLA. For two decades he has explained the implications and predicted trends in the PLA's force structure and doctrine. His chapter in *China Policy*

¹⁸⁹Tai Ming Cheung, "The People's Armed Police: First Line of Defense," in *China Quarterly*, No. 146 (June 1996), pp. 525-547.

¹⁹⁰China News Analysis, "The People's Armed Police," (Hong Kong), April 1, 1993.

¹⁹¹James Mulvenon, "The Sword and the Shield: Military Control of the People's Armed Police, 1995-1997," a paper presented at the National Association of Asian Studies Conference, Chicago, IL, March 13-17, 1997.

For the Next Decade, Report of the Atlantic Council's Committee on China Policy, published in 1984,¹⁹² outlined several trends that apply even to the present:

- "Becoming more professional means the PLA becomes more oriented to the external threat." (This trend suffered a major setback in 1989, but has since been resumed.) "It means a greater emphasis on modern weapons, technology, and military training in addition to more discipline, improvements in command and control and a decrease in political training and non-military duties" (p. 191). (Wilhelm acknowledges, however, that as part of the PLA's role in society, it and the PAP are required to undertake emergency relief efforts for natural disasters such as floods and earthquakes. These efforts have helped restore some its reputation with the Chinese people damaged in 1989. Emergency functions of the PLA also provide a rationale for maintaining a fairly large standing force, though active duty forces can be augmented by reserves and militia for these requirements.)
- "People's War, as a concept, is not dependent of a specific level of technology, thus it can and will be adjusted to make maximum use of modern weapons" (p. 206).
- "The development and deployment of nuclear-capable artillery is the least likely approach [in the development tactical nuclear weapons] because of R&D costs, structural inadequacy of current PLA artillery, and, more importantly, the command, control, and doctrinal changes required" (p. 212). (There has been no indication of the development of nuclear artillery rounds to date.)
- "Over the next decade, China will avoid bulk procurement.... China will avoid the development of complete new systems if it can upgrade existing systems to an acceptable level of performance through incremental modification..." (p. 214).

Eleven years later in October 1995, Wilhelm testified before the Senate Committee on Foreign Relations Subcommittee on East Asian and Pacific Affairs.¹⁹³ In his opening paragraph, he alluded to the ant hill analogy, "On a bilateral basis under optimum circumstances, China can orchestrate a limited

¹⁹²Alfred D. Wilhelm, Jr., "National Security—The Chinese Perspective," in *China Policy For The Next Decade*, Report of the Atlantic Council's Committee on China Policy (Boston: Oelgeschlager, Gunn & Hain, 1984), pp. 181-219.

¹⁹³"The Growth and Role of the Chinese Military," Hearing before the Subcommittee on East Asian and Pacific Affairs of the Committee on Foreign Relations United States Senate One Hundred Fourth Congress First Session, October 11 and 12, 1995, S. HRG. 104-330 (Washington D.C.: U.S. Government Printing Office, 1996), pp. 51-63.

preponderance of power against any of its neighbors, but with U.S. support none need feel threatened" (p. 54). (Note the qualifiers, "On a bilateral basis" and "under optimum circumstances," that preface that statement.) He stressed the long-term nature of Chinese military modernization, and concluded:

....by the middle of the 21st century, China will be a major power with a military capable of challenging the United States. Whether it will or not depends on whether the West approaches China as an enemy or as a responsible member of the international community... (p. 54-55).

Three years before Jiang Zemin gave the order to do so, Wilhelm predicted "by 2010, the PLA should have divested itself of the majority of its enterprises" (p. 56). His prediction that China is "unlikely to indigenously design and begin construction of a bluewater carrier (60,000 tons) with an Initial Operation Capability much before 2020" (p. 59) appears to be accurate today. However, immediately following he said, "It will however, probably invest in two or three indigenously designed pocket carriers," of which there is no sign as yet. He also predicted by 2010:

- A reduction of manpower to two million;
- A reduction of Group Armies to about 16;
- A reduction of units forward deployed along China's borders;
- Development of a limited number of precision guided munitions;
- The conversion of selected strategic missile units to MIRV systems (p. 62).

Perhaps the most memorable image Wilhelm described was that of the PLA as a "puffer fish." China's national security policy is to conceal "one's actual capability in such a way that estimates by outsiders make you appear larger than life..." (p. 59). Notwithstanding the publication of its White Paper on National Defense in 1998, Beijing's unwillingness to provide any degree of tactical transparency enhances its puffer fish image. With its tradition of deception, the PLA leadership must be quietly pleased when many foreign writers credit the PLA with capabilities it still has not achieved, thus contributing to the illusion of the puffer fish.

A Brief Comment on the RMA

In 1997, the publication of Michael Pillsbury's *Chinese Views of Future Warfare* caused quite a stir.¹⁹⁴ The book is a rare chance for the public to read recent Chinese military literature without the filter of a foreign commentator. It consists of 40 articles provided to Pillsbury by the Chinese Academy of Military Science, which he groups into four parts on: The Strategic Thought of Deng Xiaoping, Future Security Trends, Modernizing for Local War, and The Revolution on Military Affairs. Soon after its publication, several commentators and journalists used excerpts from the volume to highlight the PLA's interest in modern technologies that could lead to advances in the 21st century.

In fact, there are very few examples in the book of what China is actually doing with regard to future force structures, weapons systems, and doctrines. Rather, in addition to discussing China's defense policies since 1985, the majority of the articles that refer to future warfare explain developments in foreign militaries, especially the United States, and the conduct of recent wars, with primary emphasis on the 1991 Persian Gulf War. In effect, the majority of articles in the book are aimed at educating a Chinese audience about the complexities of modern warfare and to familiarize them with many of the technologies already in use on other militaries.

The book is nevertheless an important contribution to the foreign appreciation of Chinese military thought. Though there are a few very general descriptions of trends in Chinese military development, the themes found most often throughout the articles include:

- China is a developing country with the primary central task of economic development.
- Military modernization is subordinate to the overall goal of national economic construction.
- Continued economic development depends on the maintenance of peace and stability, both regional and domestic.
- China must be prepared for its most likely threat—a limited conflict along its borders.
- Because of the requirement to put national economic development first, the purchase of modern high-technology equipment from foreign

¹⁹⁴Michael Pillsbury, ed., *Chinese Views of Future Warfare* (Washington D.C.: National Defense University Press, 1997). For comments on the book, see William C. Triplett II, "Bidding welcome to officers of the PLA," *The Washington Times*, July 10, 1997, and "Chinese Covet High-Technology Arsenal," *Defense News*, May 19-25, 1997.

sources and funding for the military will be limited. If economic modernization is successful, sometime in the future the country may be able to afford to divert a greater proportion of national wealth to the military.

- For the foreseeable future, the Chinese armed forces must devise ways to defeat a superior enemy using its existing equipment. At the same time, it will study modern warfare and prepare its forces for the 21st century by becoming smaller in size and increasing its technological quality.

Given the hype that surrounded the book's publication, these are not themes that were greatly expected. To Pillsbury's volume, the U.S. Army War College Strategic Studies Institute held on Conferences on "China into the 21st Century: Strategic Partner and... or Peer Competitor." At the conference, Bates Gill discussed the economic and socio-cultural factors "which affect China's capacity for change, innovation, and adaptability particularly in areas of activity critical to grasping the current RMA.." ¹⁹⁵ Gill concludes China is not within reach of "the emergent RMA" within the next 5-10 years (p. 35). However:

- "It is possible that the concentrated effort of China's greatest resource, its people, could result once again in significant advances within the current RMA.. This may be more difficult than in previous efforts, but with the availability of technology and expertise increasingly available from outside sources, China could succeed in developing and deploying an "RMA with Chinese characteristics": perhaps less sophisticated, but sufficient for Chinese needs." (p. 34)
- "The Chinese effort to master "high-tech warfare with Chinese characteristics" may be slow but its potential threat cannot be entirely dismissed." (p. 35)

At the same conference, U.S. Army Lieutenant Colonel Lonnie Henley also addressed the issue of "China's Capacity for Achieving a Revolution in Military Affairs." ¹⁹⁶ Henley noted that since the 1980s, "the PLA has been focused on the organizational, doctrinal, and human aspects of military modernization, waiting in the meanwhile for Chinese defense industries to catch up with their Western counterparts and begin producing advanced systems at a price China

¹⁹⁵ Bates Gill, "China and the Revolution in Military Affairs: Assessing Economic and Socio-Cultural Factors," in *China and the Revolution in Military Affairs* (Carlisle Barracks, PA: U.S. Army War College Strategic Studies Institute, 1996), pp. 1-42.

¹⁹⁶ Lonnie Henley, "China's Capacity for Achieving a Revolution in Military Affairs," in *China and the Revolution in Military Affairs* (Carlisle Barracks, PA: U.S. Army War College Strategic Studies Institute, 1996), pp. 43-57.

can afford" (p. 46). He echoes the insights Harlan Jencks made in 1982 when he states, "It seems clear that Beijing does not intend to refit the entire PLA with modern weapons and equipment. The majority of the PLA's 100-plus ground force divisions will remain low- to medium-tech forces... A much smaller number, perhaps 12-18 divisions, are striving to become modernized, mobile forces...." (p. 47-48)

Henley warns that it is not likely that China will duplicate the American high technology and information-based breakthroughs of the 1980s and 1990s for another decade or longer, but "it is possible they will make significant breakthroughs in some other direction entirely" (p. 54).. Henley concludes:

On its current course, the PLA will achieve significant improvements in its ability to execute large-scale joint operations in defense of the Chinese homeland, and, to a lesser extent, in its ability to project force against Taiwan or into the Spratly Islands. Over the next two decades, it may even achieve the capabilities comparable to that of the U.S. armed forces in the 1990s. It is unlikely, however, the China will achieve a revolution in military affairs for at least the next quarter century." (pp. 56-57)

There is no debate that the PLA is moving forward with its military modernization and improvement of its capabilities, the question of pace is the issue. Should Henley's assessment come true, the PLA will become a more viable and dangerous regional force within the next 15-20 years, a somewhat slower pace than those who predict acquisition of significantly improved capabilities by 2005 or 2010.

Current Developments

As announced by Jiang Zemin in September 1997, the PLA currently is in the midst of a five hundred thousand-man reduction. Large numbers of obsolete equipment, such as fighters and submarines, are being retired from service and not replaced. Three group army headquarters have been eliminated and more may follow. Most of the remaining group armies have lost a division from their structure as entire divisions are disbanded or transferred to the PAP. Many divisions are being down-sized to brigades. Some units whose higher headquarters have been disbanded will be transferred to the control of other headquarters. The elimination of intermediate and redundant headquarters, in theory, should decrease the time it takes to make decisions and issue orders.

Reaction times may be improved if units are able to consolidate subordinate elements closer together for more rapid assembly and deployment than was possible when they were larger and scattered over a wider area. Co-location of subordinate elements of different service arms may also provide the opportunity for more frequent combined arms training by making it more convenient and affordable. (Previously, the subordinate regiments of many ground force divisions were widely separated in order to protect them from nuclear attack. Tanks and most artillery and engineer assets were found at division level and often located at a distance from the division's three infantry regiments. Therefore, combined arms training among the various elements in many divisions was not conducted as frequently as necessary for proficiency.) The structural and location changes that are under way will require contingency plans for the entire force to change to reflect current realities.

In early-1999, the terms of service for conscripts were cut from three years (for the army) or four years (for the navy and air force) to two years for all services. By shortening enlistment times, Beijing hopes to attract higher-quality soldiers and to increase the proportion of non-commissioned officers (NCOs) to conscripts by making voluntary extensions more attractive.

However, shortening the enlistment period will have consequences for PLA training, personnel management, and unit integrity. Tactical units will be forced to radically adjust their personnel and training systems to cope with greater personnel turnover and turmoil every year. These types of changes put additional stress on small unit leaders. New soldiers, sailors, and airmen will have to learn basic soldier skills quicker than in the past. This will be increasingly difficult as more advanced technology is introduced into the force.

As enlisted troops serve for a shorter period of time, the role of the NCO is likely to be expanded. NCOs may be increasingly responsible for leadership and technical responsibilities, particularly in the fields of maintenance and logistics. The shortcomings of the PLA NCO corps have been recognized for years by both domestic and foreign observers. The change in terms of service will accelerate the strengthening of this portion of the PLA.

The PLA is now examining how to make its basic training shorter and more intense so that new troops can be integrated into their units faster. At the same time, the system of academies for the education of officers and NCOs is being reduced to correspond to the needs of a smaller force.

Eventually, as more young men are rotated in and out of the active forces, a larger pool of trained personnel will be available for the expanding reserve

force. As the reserves become larger, their integration into operations with active forces will become increasingly important in Chinese doctrine.

The amount of structural change under way in the PLA today is bound to be disruptive to the combat readiness of the force. With so many changes going on at one time, morale problems among the officers and troops could result. Uncertainty about reductions and relocations could easily lead to anxiety in the forces. In order to alleviate some of the pressures on commanders and troops alike, the central leadership appears committed to continue to emphasize pay increases and improvements in living standards, such as food and housing.

Not all the changes may be successful and additional modifications will probably be required in the future. Contrary to the frequent characterization in the foreign media of a rapidly modernizing force, these changes portray a military undergoing a much more gradual, deliberate, long-term modernization process.

If, and it is a big if, the various reforms under way in the PLA are successful and the equipment acquisitions reported to have been made actually take place, then in 10 to 15 years the Chinese military is likely to have some of the capabilities as did the Soviet forces in the Far East in the late-1980s, but in lesser numbers. While the PLA independently may acquire a few unique RMA capabilities of its own in the first and second decade of the new millennium, the majority of its modern weaponry will be of the generation that was defeated in the Persian Gulf War.

The U.S. forces that fought the 1991 Persian Gulf War were designed to defeat the Soviet forces of the 1980s. In the years since the Gulf War, the U.S. military has made advances that are causing even its NATO allies to question whether their militaries can keep up with U.S. forces.¹⁹⁷ Unless the U.S. military declines precipitously or is withdrawn from Asia over the next 10 to 15 years, there will still be a large gap between Chinese and modern American military capabilities in the region. If the Chinese economy continues to expand, this gap will close as time goes on and the Chinese temporal goal of mid-century approaches.

No matter what its pace, China's military modernization and the changes in its force structure merit careful monitoring and objective analysis by its Asian neighbors, the United States, and other Western countries. However, the Chinese military of the early twenty-first century most likely to develop is not

¹⁹⁷This situation was demonstrated during the campaign against Yugoslavia.

the threat upon which the United States military should base its current force modernization.

4. Compensating for Deficiencies: Doctrinal Evolution in the Chinese People's Liberation Army: 1978–1999

By Paul H. B. Godwin¹⁹⁸

Everything in war is simple, but the simplest thing is difficult.

—Carl Von Clausewitz

Past as Prologue

Immediately following the Korean War, China began, with extensive Soviet assistance, to develop the military capabilities of a great power. China's military leadership was seeking to overcome the challenge they had faced since the Red Army of Workers and Peasants was founded on 1 August 1927: How to defeat an adversary superior in the means of war? Defense modernization programs initiated in the mid-1950s were to ensure that a future Chinese People's Liberation Army (PLA—as all four services are collectively named) would never again face an enemy equipped with superior arms. To meet this challenge, Beijing sought the entire panoply of modern weaponry from nuclear-tipped ballistic missiles through long-range bombers to fighter aircraft, tanks, armored vehicles, artillery, destroyers, and submarines. When in the late-1950s the USSR refused support for nuclear-powered attack and ballistic missile submarines (SSN/SSBN), China initiated its own programs. Doctrinal adjustment followed the weaponry being acquired. By the late-1950s, Marshal Ye Jianying would dub these changes "People's War Under Modern Conditions."

Mao Zedong's domestic and foreign policies brought these modernizing ambitions to an end. His 1950s clash with an officer corps that he believed too willing to accept an expensive, technology-heavy Soviet military doctrine and to reject his principle of "man over weapons" has been thoroughly examined in

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Ellis Joffe's now-classic study.¹⁹⁹ This initial conflict with his military chiefs must be seen in the larger context of Mao's split with the USSR and his radical domestic policies to build a revolutionary society. Following a series of foreign policy disagreements and growing distrust between Mao and Khrushchev, Moscow sought to bludgeon Beijing into accepting the USSR's leadership and policies. The Soviet Union canceled its support for Beijing's nuclear weapons program in 1959 and in the summer of 1960 severed essentially all of its assistance programs—both civil and military. With the exception of the nuclear weapons programs, succeeding years saw Chinese defense industrial base and research and development (R&D) infrastructure erode inexorably into obsolescence. By the mid-1970s, China's defense industries were capable only of building weapons and equipment based on Soviet technologies of the 1950s. The defense R&D infrastructure was equally harmed and incapable of designing and developing weapons and equipment meeting the demands of late-twentieth-century warfare.

Eroding defense industrial and R&D capabilities were paralleled by the PLA's years of involvement in Mao Zedong's monomaniacal domestic political campaigns, especially the Cultural Revolution of 1966 to 1976. Over a decade of less-than-adequate training reduced China's armed forces to an ineffective fighting force. Deng Xiaoping's mid-1970s assessment that the PLA had become an aging, overstaffed, arrogant, obsolescent giant incapable of conducting modern warfare²⁰⁰ was borne out by its poor performance during the 1979 incursion into Vietnam.²⁰¹ On the eve of the reform period in the late-1970s, therefore, the modernization and doctrinal evolution of the PLA were at a historic low point.

This chapter analyzes the developments in these two realms since 1978 and is divided into the following three sections: general war with the USSR; limited, local war; and post-Desert Storm high-tech war. In each of these three time periods the assessment of the security environment and the PLA's doctrinal evolution confronted serious deficiencies in equipment, personnel, and training and required corrections that relied more on creative workarounds than on technology.

¹⁹⁹Ellis Joffe, *Party and Army: Professionalism and Political Control in the Chinese Officer Corps 1949–1964* (Cambridge: Harvard East Asian Monographs, 1967).

²⁰⁰Deng Xiaoping, "Speech at an Enlarged Meeting of the Military Commission of the Party Central Committee" (14 July 1975), in Joint Publications Research Service, *China Report* (hereafter JPRS-*China Report*), 31 October 1983, p. 19.

²⁰¹See Harlan W. Jencks, "China's 'Punitive' War on Vietnam: A Military Assessment," *Asian Survey*, Vol. XIX, No. 8 (August 1979), pp. 801–815.

Definitions

Three terms are at the center of this analysis: military *doctrine*, *strategy*, and *operations*. *Doctrine* consists of the fundamental principles guiding those who plan the use of military forces. These principles are drawn from experience, analysis of past wars, and speculative analysis of potential future wars. *Strategy* defines the way in which military forces are employed to achieve the desired outcome of an actual or potential conflict. Doctrine and strategy are intimately linked, for doctrinal principles have a strong determining effect on a chosen strategy. *Operations* are the campaigns conducted or planned to achieve a strategy's objective. *Operational doctrine* consists of the principles guiding the use of military forces to conduct the operations. For the past two decades, Chinese military journals have focused primarily on analyses of operational doctrine.

Defense Modernization Strategy in 1979: Walking on Two Legs

Deng's approach to defense modernization was part of a much broader strategy to bring China into the ranks of the world's leading powers early in the twenty-first century. In the mid- to late-1970s, China's military security community had sought to raise the threat of Soviet invasion to crisis proportions. Deng's defense programs, however, were not focused primarily on improving the PLA's ability to defend against a possible Soviet attack. He viewed Moscow's "threat" as neither imminent nor dangerous enough to warrant the massive diversion of resources from civil to military requirements sought by much of China's security community.²⁰² Defense modernization therefore followed a two-part strategy that in Maoist terms could be called "walking on two legs." The long-term strategic objective was to create a largely self-sufficient defense establishment capable of developing and sustaining modern forces sufficient both for defense and to grant China the military status of a world power. A second objective was to improve the PLA's near-term combat effectiveness using the weapons and equipment in its current inventory. These two processes were intimately related. If the PLA was to become capable of effectively using its current and then more technologically sophisticated weapons and equipment as they were introduced in the future, the groundwork

²⁰²For a thorough discussion of the debate over defense and security issues for the years 1973 through 1978, see Harry Harding, "The Domestic Politics of China's Global Posture, 1973-1978," in Thomas Fingar, ed., *China's Quest for Independence: Policy Evolution in the 1970s* (Boulder: Westview Press, 1980), pp. 43-96.

had to be laid before more advanced weaponry entered the inventory. In short, defense modernization was to be incremental and slow.

Limitations on Doctrinal Change

There were six constraints on doctrinal change. First, with investment priorities placed on the civil sector of the economy, defense budgets would be fettered. Second, China's obsolescent defense industrial base was incapable of placing modern weapons and equipment into serial production. There could be no quick upgrading of PLA weapons and equipment. Third, the bulk of the PLA officer corps (referred to as *cadre* because there were no formal military ranks until 1987) was over-aged, undereducated, and incapable of understanding and conducting modern warfare. Fourth, the armed forces themselves were neither organized nor trained for contemporary warfare. Fifth, the logistics and command and control systems were incapable of supporting the operational doctrine of a modern battlefield. Sixth, the doctrine, strategy, and concepts of operations directing the armed forces were as antiquated as the PLA's arms and equipment, requiring Beijing to rebuild the armed forces' centers of research and professional military education.²⁰³

These constraints meant there was no capability within China's defense establishment to rapidly transform the PLA into a modern combat force. Even if modern arms were available, China's armed forces were incapable of successfully undertaking the doctrinal, organizational, logistics, maintenance, and training changes required to transform the PLA into an effective, late-twentieth-century combat force. It was thus understood from the very beginning that doctrinal change could not be successful without reconstructing and reforming China's entire defense establishment. Discussions in China's military journals and official statements supported the principle that doctrinal change would be cautious. Change was to ensure combat capabilities using existing arms and equipment were maximized and not undermined by doctrinal demands that could not be fulfilled.

In the fall of 1979, China's defense minister, Xu Xiangqian, and Xiao Ke, who was charged with revitalizing the PLA's research centers and professional military education, laid out the problem. Both were undoubtedly reflecting on

²⁰³ In 1979, Xiao Ke, President and Political Commissar of the PLA Academy of Military Science (AMS), saw revitalizing the AMS as emancipating the minds of PLA strategists—freeing them from stultifying consequences of a literal dependence on Mao Zedong's writings. *Xinhua*, Beijing Domestic Service, 9 September 1979, in *Foreign Broadcast Information Service, Daily Report: People's Republic of China* (hereafter *FBIS-China*), 10 September 1979, pp. L13–L15.

the PLA's poor performance in Vietnam earlier that year. Xu Xiangqian declared the PLA could not meet the demands of modern war. He acknowledged there were many issues to be resolved, including the conduct of joint operations, before China's armed forces could make use of modern weaponry. As he stated, "... we have seen many incidents in the history of war in which an army was defeated, not because its weapons were poor, but because its commander had backward military thinking and directed military operations the wrong way."²⁰⁴

Xiao Ke put it this way: "Now we must study strategy, tactics, military science, and technology for waging people's war under modern conditions. To follow the method of 'luring the enemy in deep' used by the Red Army during the Jiangxi period and apply it mechanically would be absurd. At that time we occupied no cities and had no modern industry; we took everything needed from the enemy."²⁰⁵

The dilemma was what to change and how? Resources were limited and neither the PLA officer corps nor the training and organization of China's armed forces were capable of rapid transformation. Much would depend on how China's defense requirements were defined.

Trends

Over the next two decades, three shifts in China's defense requirements set the stage for the principal changes in operational doctrine. First, in the late-1970s strategy for defense against the Soviet Union was revised. Second, in 1985 Beijing changed China's national military strategy from its single-minded focus on the USSR to preparing for local, limited wars on China's periphery. Third, the conduct of the 1991 Persian Gulf War brought about severe misgivings within the military leadership over the PLA's ability to conduct war effectively in the twenty-first century.

In response to these changing requirements, the past 20 years have seen the focus of China's national military strategy shift from continental to peripheral defense and maritime force projection. In its approach to the conduct of war, PLA operational doctrine has changed from defense in depth to forward defense, force projection, and grappling with the implications of the RMA and

²⁰⁴Xu Xiangqian, "Strive to Achieve Modernization of National Defense—In Celebration of the 30th Anniversary of the Founding of the People's Republic of China," *Hong Qi* [Red Flag], No. 10, 2 October 1979, in *FBIS-China*, 18 October 1979, pp. L15–L16.

²⁰⁵Beijing, Xinhua Domestic Service, 9 September 1979, in *FBIS-China*, 10 September 1979.

Information Warfare (IW) as its strategists contemplate twenty-first-century warfare. While retaining its traditional offensive (active defense—*jiji fangyu*) orientation, PLA operational doctrine has sought to change from a ground-force-dominated, almost single-service approach to war, to joint operations seeking the synergy derived from multi-service joint operations. In conceptualizing the battlefield, the PLA has shifted from a three-dimensional conception where the ground war was the central focus to a multidimensional “battlespace” where space and cyberspace play roles as important as the traditional air-land-sea dimensions. As these changes were under way, doctrine and strategy for nuclear forces came under review as ballistic missile defenses threatened China’s core doctrine of minimum deterrence and undermined the emerging operational significance of tactical ballistic missiles. Analyses by nuclear warfare strategists began to favor a transition toward the more complex demands of a limited deterrence doctrine.

To the military leadership’s continuing frustration, as each of these changes has been undertaken, the intractable dilemma facing the PLA and its predecessors since the late-1920s remained: Their major (and perhaps critical) potential adversaries held superior capabilities in each dimension of warfare. The principal issue confronting PLA operational doctrine has therefore remained the same—how to compensate for its many deficiencies.

Deterrence and Defense Against the USSR: 1978–1985

Revising strategy for defense against the USSR was the first step in PLA doctrinal transformation. Process toward this revision was under way even before the PLA conducted its ill-fated operations into Vietnam and before any policy guiding defense modernization had been announced. The objective of the revised strategy was to disrupt and defeat a Soviet attack before it could penetrate deep into China. In this manner, PLA strategy was to deny Soviet forces the quick military victory they would seek. Equally important for China’s defense modernization programs, PLA planners had to recognize the difficulties of making up for at least a decade of inadequate training and professional military education as they thought through the difficulties of revising strategy. Many of the issues raised in the late-1970s were to become the bedrock for rebuilding the Chinese armed forces as the years progressed.

The principal obstacle faced by the PLA in 1978 was the superior mobility and lethality of Soviet armaments, including organic tactical battlefield nuclear weapons. The core of the PLA’s revised strategy was revealed by Marshal Nie

Rongzhen in his speech at the August 1978 National Militia Conference.²⁰⁶ Nie presented a grim picture of the Soviet threat. Viewed as bent on subjugating China, the USSR was declared the most dangerous adversary ever faced by the PLA.²⁰⁷ Marshal Nie did not underestimate Soviet military capabilities. He assumed Soviet forces would attack suddenly, using nuclear and technologically advanced conventional weapons. Soviet forces would employ fast-paced joint warfare using large numbers of aircraft, tanks, and mechanized and airborne forces to crush opposing units and penetrate deep into China during the opening phases of the assault. The scale and ferocity of the attack would be far greater than any China had faced in the past.²⁰⁸

It became evident over the next couple of years that the model of the Soviet attack used by PLA planners was the USSR's 1945 Operation August Storm against Japanese forces in Manchuria. That operation was a multiple-axis joint campaign launched into north and northeast China from bases in the Soviet Far East and Mongolia. The added danger in the late-1970s was the integration of tactical nuclear weapons in Soviet strategy. Beijing anticipated the USSR attack would replicate August Storm in some form, for north and northeast China contained important political and industrial centers. Beijing's planners were not anticipating a Soviet attack designed to conquer and occupy China. What they feared was a disabling strike into the political and industrial heart of the nation.

Nie Rongzhen's approach to developing a forward defense against a potential Soviet assault was traditional for the PLA: identify the adversary's core weakness, in this case the Soviets' dependence on tanks and mechanized infantry for the speed of the advance. Nie referred to these units as Soviet "tortoise shells," arguing that "without their 'tortoise shells' they cannot do much. Our enemies feel reassured by their modernization and mechanization. In fact, as men must eat so machines must 'eat' too."²⁰⁹ Marshal Nie, who had served as PLA chief of staff during the Korean War, was well aware of the problem of providing logistical support for rapidly advancing columns consuming vast amounts of supplies. Logistical support had been Marshal

²⁰⁶"Nieh Jung-chen's (Nie Rongzhen) August 4 speech at the National Militia Conference," Peking (Beijing), NCNA (Xinhua) Domestic Service, 7 August 1978, in *FBIS-China*, 8 August 1978, pp. E1-10.

²⁰⁷*Ibid.*, p. E10.

²⁰⁸*Ibid.*, pp. E5-E6.

²⁰⁹*Ibid.*, p. E7.

Peng Dehuai's critical weakness in the five offensives he conducted in the fall and winter of 1950/1951.²¹⁰

When rethinking concepts of operations to support a forward defense, planners were working with a PLA that was far from a pure infantry force. By the late-1970s, although they could not match those of the USSR, PLA armaments were abundant. China's armed forces fielded thousands of tanks and artillery tubes and thousands of combat aircraft. The PLAN had more than 100 submarines in the fleet, joining 15 destroyers, 23 frigates, hundreds of missile-armed fast attack craft (FAC), and its first nuclear-powered attack submarine (SSN) had entered service. Initial operating capability (IOC) of China's medium-range ballistic missile had occurred in 1966, with its intermediate-range ballistic missile (IRBM) achieving IOC in 1972. IOC for China's intercontinental ballistic missile was anticipated for 1982, and sub-surface launch of the missile for the PLAN's single nuclear-powered ballistic missile submarine (SSBN) was being scheduled. Thus, the PLA was far from impotent. Making the best possible use of the weapons in the inventory was the issue, but PLA operational planners had not systematically confronted this issue for many years.

At the core of the PLA's revised strategy²¹¹ was the decision to defend critical locations along the border viewed as the most probable avenues of approach. Cities were seen as likely Soviet targets and as traps to be defended as grimly as the Red Army had fought for Stalingrad. Positional warfare using hardened defenses was to blunt the initial Soviet assaults. Mobile warfare was to supplement positional defenses by maneuvering to attack any forces seeking to bypass the defenses. PLA planners preferred not to rely on positional defense, but their forces lacked the mobility and firepower required for maneuver warfare against superior Soviet arms. When maneuver warfare was employed, Soviet forces bypassing Chinese positional defenses were not to be "lured deep" but onto battlefields of the PLA's choosing.²¹² As regular PLA forces were blunting the attacks and gripping Soviet forces in combat, guerrilla forces would be operating behind the Soviet forces, disrupting their logistical support tail. Chinese planners sought to break the tempo of Soviet operations and stall

²¹⁰Nie Rongzhen *Huiyi Lu* [Memoirs of Nie Rongzhen] (Beijing: Jiefangjun Chubanshe, 1986), pp. 751-762.

²¹¹Harlan W. Jencks provided a detailed critique of this strategy in "People's War Under Modern Conditions: Wishful Thinking, National Suicide, or Effective Deterrent," *The China Quarterly*, No. 98 (June 1984), pp. 305-319.

²¹²Reported by General Andre Marty in an interview with Agence France Presse (AFP) following a conversation with Wu Xiuquan, PLA Deputy Chief of Staff. Georges Biannic, AFP, Hong Kong, 3 May 1979.

the attack. With the Soviet assault stumbling, Chinese forces would then eject the weakened invaders in a series of counteroffensives.

Nuclear forces were included in Chinese planning, perhaps for the first time since the nuclear weapons program was inaugurated in the mid-1950s.²¹³ Although China was not known to have tactical nuclear weapons, training exercises were conducted where the PLA both defended against simulated battlefield nuclear weapons and used them offensively.²¹⁴ The few strategic weapons deployed were to threaten a punitive second strike should Moscow threaten to or use its strategic forces. In this sense, deterrence and warfighting were joined into strategy and concepts of operations.

Deficiencies

As the elements of the new strategy were discussed and analyzed in the following years, a number of severe deficiencies became evident. First, the PLA ground forces had not trained for combined arms operations or for joint operations where two or more services operate together. Of particular importance, the PLAAF (People's Liberation Army Air Force) was not trained or organized for close air support (CAS) of the ground forces or for battlefield interdiction (BAI) missions. Without joint doctrine and training, effective command and control coordinating air and ground operations was not possible. Nor could the PLAAF anticipate air superiority over a more technologically advanced and better-trained Soviet air force. Lacking air superiority, Soviet CAS and BAI would devastate PLA positional defenses and lay waste to any maneuver elements the PLA would deploy to prevent Soviet forces from bypassing positional defenses. Similarly, Soviet air power could roam at will over Chinese rear areas and lines of logistical support.²¹⁵ In short, Chinese strategists had identified Soviet weaknesses but could take only limited corrective actions in these early years to minimize their own deficiencies.

Second, an underdeveloped road and railroad infrastructure meant there was little strategic mobility within China itself. A forward defense strategy required standing forces at higher levels of readiness than was the PLA norm. Because

²¹³See Xu Baoshan, "We Must Be Prepared to Fight Nuclear War in First Stages of Any Future War," *Jiefangjun Bao*, 16 September 1979, in *JORS-China*, 4 June 1980, pp. 97-99.

²¹⁴Beijing, *Xinhua*, 20 July 1982, in *FBIS-China*, 22 July 1982, pp. K2-K4; and "PLA Units in Ningxia Hold Military Exercise," *Ningxia Ribao*, 27 June 1982, in *FBIS-China*, 6 July 1982, pp. K19-K20.

²¹⁵Recognition of air power deficiencies can be seen in Zong He, "Tentative Discussion of the Characteristics of Modern Warfare," *Shijie Zhishi*, No. 15 (August 1983), in *JPRS-China Report*, 11 October 1983, p. 79.

the PLA could not move troops and heavy equipment quickly across China, the new strategy required combat packages to be in place and ready to fight. When the defense of China had been based on strategic withdrawal and a protracted war, there was time for mobilization. The new strategy provided no such luxury. Readiness and pre-positioned forces were essential for the strategy's success.

Correction

In the years that followed the initiation of a forward defense strategy, a series of decisions was made focused on improving the PLA's capability to conduct modern warfare and implement the strategy. Defense Minister Zhang Aiping aptly described the PLA's new approach to war in 1983, with the observation that "the principle of war is to achieve the greatest victory at the smallest cost. To achieve this we should depend not only on political factors, but also on the correct strategy and tactics of the war's commander, the sophisticated nature of our military equipment, the quality of the personnel who use the equipment, et cetera."²¹⁶

In expressing the essence of the PLA's new approach to war, Zhang Aiping linked doctrine, strategy, operations, training, and equipment. This approach was joined to a series of decisions, all of which were designed to build a more militarily effective PLA and correct the deficiencies that became evident with the new strategy.

Earlier failure by the PLA ground forces to undertake combined arms warfare led to the reorganization of the 35 infantry-based "field armies" into 24 group armies (*jituanjun*). Group armies combined armor, infantry, artillery, air defense, and other ground force branches into a single command to provide the organizational structure for combined arms operations. In 1984, the first step was taken to build a "reserve" system for all of the services, as the PLA moved toward a ready reserve system modeled to some extent on that of the United States. In January 1985, a reduction in force (RIF) of a million personnel was announced. By 1987, this RIF was to cut 25 percent of PLA manpower. As part of the reduction, units with a primarily internal security mission were formed into the newly re-established PAP. Other actions taken to reduce manpower included drawing down the number of military regions from 11 to 7, reducing the size of headquarters units, and eliminating the headquarters of the armor

²¹⁶Zhang Aiping, "Several Questions Concerning Modernization of National Defense," *Hong Qi* (Red Flag), No. 5 (1 March 1983), in *FBIS-China*, 17 March 1983, p. K2.

and artillery branches by transforming them into sub-departments of the General Staff Department.

Perhaps equally important as rebuilding the PLA from its decrepit state of the late-1970s was that the changes under way could be viewed as a more effective deterrent against a possible Soviet attack. More frequent military exercises and the initial deployment of China's first ICBM, the *Dong Feng-5* (East Wind/DF-5), complementing increasing numbers of IRBMs, together with continuing discussion of building a PLA more competent in modern warfare could well have been part of a deterrent strategy.

Contingency Planning: Limited, Local War, 1985–1991

Doctrinal, strategy, and organizational changes initiated in 1978 were but the first stage in rebuilding the PLA. The second stage emerged in 1985, when China's security planners concluded that the USSR and the United States were locked in a global military stalemate, making a major and possibly nuclear war with the Soviet Union extremely unlikely. Future military conflicts were seen as more likely to be limited in geographical scope and political objective. War with the Soviet Union was not excluded from this revised estimate. Nevertheless, any war to be fought with the USSR was seen as far more limited than planning had previously assumed. Furthermore, the Soviet Union was no longer viewed as the only adversary China potentially faced. The new national military strategy required the PLA to prepare for a wide set of contingencies ranging from border conflicts to potentially high-intensity limited war. These demands were to place even greater pressure on a PLA that at the time had not satisfied its requirements for a general war with the USSR. Instead, the new requirements pushed China's armed forces closer to a more flexible force capable of responding effectively to a wider range of contingencies than continental defense against the Russians.

Changes in operational doctrine required by the new defense requirements simultaneously highlighted continuing PLA deficiencies in a number of critical arenas. First, limited wars and small-scale contingencies required rapid response by forces maintained at a high level of readiness. Second, given the limited political objectives sought, such conflicts placed increased emphasis on mobility, lethality, intelligence, and command and control coordinating swiftly, moving joint service operations to quickly terminate the war. These and other weaknesses were readily recognized by Chinese analysts. As one wrote, "Divorced from advanced military science and technology, we cannot possibly

build an army capable of stopping and winning modern war.”²¹⁷ Moving from threat-based planning for a known adversary to contingency planning for a number of potential conflicts was to present difficult issues PLA planners had not faced before.

Local, limited war is viewed as a specific type of conflict whose objective is not to eliminate the adversary’s capability to resist, but to “assert one’s own standpoint and will through limited military action.”²¹⁸ Such wars are not determined entirely by military action, but are strongly influenced by parallel political and diplomatic processes.²¹⁹ Although it was recognized that limited wars could be long in duration, as they were in Korea, Vietnam, and the Iran-Iraq war, Chinese operational military preparation was focused primarily on short wars. China was seen as potentially facing five types of limited war: border wars, conflicts over maritime territorial seas and territories, surprise air attack, deliberately limited attacks into Chinese territory, and “punitive counter-attacks” launched by China to “oppose invasion, protect sovereignty, or to uphold justice and dispel threats.”²²⁰

With this change in national military strategy, the defense posture around the periphery of China came under review. Given the diversity of terrain, weather, and potential adversaries located on its borders, each of China’s seven military regions (MRs) was viewed as requiring different training requirements. In adapting to the diversity of potential threats, the concept of “war zone” or “theater of operations” (*zhanqu*) was given greater emphasis than it had in the first stage of reform. Military region commanders were given the responsibility for independent campaigns and would therefore be responsible for designing and implementing training and field exercises for potential wars in their theater.²²¹

Four major field exercises were held in 1988 to determine the PLA’s readiness after three years of preparation. Three focused on the USSR as the potential adversary with exercises located in the Lanzhou, Beijing, and Shenyang MRs.

²¹⁷Wang Chenghan, “On Coordinating Development of National Defense and the Economy,” *Hong Qi*, 1 September 1987, in *JPRS: China Report*, 7 December 1987, p. 18.

²¹⁸Jiao Wu and Xiao Hui, “Modern Limited War Calls for Reform of Traditional Military Principles,” *Guofang Daxue Xuebao* (National Defense University Studies), No. 11 (1 November 1987), in *JPRS: China Report*, 12 July 1988, p. 49.

²¹⁹*Ibid.*

²²⁰Jia Wenxian, et al., “Tentative Discussion of the Special Principles of a Future Chinese Limited War,” *Guofang Daxue Xuebao*, No. 11 (1 November 1987), in *JPRS: China Report*, 12 July 1988, p. 48.

²²¹Xu Jingyao, “1988: A Year of Reform for the Chinese Army,” *Liaowang* [overseas edition—Hong Kong], No. 3 (16 January 1989), in *FBIS-China*, 24 January 1989, p. 36.

The fourth was conducted by the Guangzhou MR, where the adversary was presumably Vietnam. In each exercise, the MR commander was responsible for the campaign. Those with the USSR as the potential adversary focused on the PLA's ability to respond quickly to a blitzkrieg assault. The exercise directed at Vietnam focused on both coastal defense and protection of China's territories in the South China Sea.

The exercises introduced new types of forces designed to fulfill specific responsibilities within the concepts of operations required for limited war. Designated "fist" (*quantou*) and "rapid response" (*kuaisu*) forces, they were given specific missions. Their operational responsibilities were as "door openers," creating a breach in the enemy's defenses; as "scalpels" to strike targets that when eliminated will tend to paralyze an adversary; as "steel hammers" to seize critical enemy positions; and as "boosters" to speed up the tempo of an operation by opening up new battle areas.²²² The significance of these new types of forces was that they demonstrated the PLA's move toward using elite units in the opening phase of a conflict. Such units would be small, but better trained and equipped than the majority of the PLA. While far from unique (all major militaries have such units), they marked yet another indicator of PLA planners' move toward more flexible, quick-reacting forces and away from mass armies as the source of military power.

Air power was noticeably absent from the analyses surrounding these exercises. One can assume they were part of the combined ground force exercises, but there was no analysis or discussion of the role of air power. Yet as in the revised strategy for defense against the Soviet Union, air power would play a significant role in limited, local war.

Where the PLA was to face even greater challenges was with the maritime component of the new national military strategy. Within China's former continental defense strategy, the PLAN's principal task was as a coastal defense force. It would defend against amphibious assaults and protect China's offshore islands and sea lines of communications (SLOC). As part of the revised national military strategy, PLAN Commander Liu Huaqing requested his staff to prepare a long-range plan for naval development.²²³ His planners came up with a force development strategy that transitioned the PLAN from coastal defense (*jinhai fangyu*) to an offshore defense (*jinyang fangyu*) perimeter

²²²Li Qianyan, "A Cursory Analysis of the Characteristics of Limited War of the Future," *Jiefangjun Bao*, 19 December 1986, in *JPRS: China Report*, 23 September 1987, p. 91.

²²³John W. Lewis and Xue Litai, *China's Strategic Seapower: The Politics of Force Modernization in the Nuclear Age* (Stanford: Stanford University Press, 1994), pp. 219–230.

extending from coastal waters out to a distance of 200 to 400 miles by the year 2000. By 2050, they sought a blue-water navy (*yuan yang haijun*).

To implement such a force development plan, China's navy had to overcome significant deficiencies. First, it had no experience with extended combat operations at sea. For all of its history, it has been an adjunct to the ground forces and a junior partner in the PLA. Second, its ships and the aircraft of the PLAN Air Force (PLANAF) were obsolescent. Building a blue-water navy would be an extremely expensive and long-term task. Purchasing a blue-water navy, assuming that was an option, was simply not feasible.²²⁴ Certainly, improvements could be made, but even a modern offshore navy was not plausible until 2010, if then.

Whereas air and naval power received little attention, the role of nuclear deterrence in local, limited wars was addressed. China's analysts paid close attention to the nuclear strategy of "medium powers" such as Britain and France. They concluded that the principal task of nuclear strategy in limited, local war is to prevent manipulation by the "superpowers." In small wars, especially where lesser states act as agents for great powers, the nuclear retaliatory capability of medium powers can perhaps prevent interference by the great powers.²²⁵ Although nuclear weapons had not been used in local war, PLA researchers took note of a Brookings Institution study on the role of nuclear forces in these wars. The Brookings analysis determined that in 215 incidents involving U.S. forces since World War II, the use of nuclear weapons was considered in at least 33 cases.²²⁶ Reflecting this view, China's missile forces have conducted exercises in which they prepared for "nuclear counterattack operations" during maneuvers designed to evaluate conventional forces' preparation for unanticipated military contingencies. Presumably, the Second Artillery Corps, which is responsible for China's strategic forces, took part in these exercises to ensure they would be operationally ready to launch a response to any adversary's threat or use of nuclear weapons.

As the 1980s ended, it became increasingly evident that the PLA was preparing to conduct a different kind of war where readiness, joint operations, speed, and lethality were seen as the keys to victory. It was equally evident that the arms and equipment of the PLA were not suitable for the kinds of wars they planned to fight. China's armed forces were on a path to becoming "leaner and

²²⁴For analysis of these options, see Christopher D. Yung, *People's War at Sea: Chinese Naval Power in the Twenty-First Century* (Alexandria, Va.: Center for Naval Analysis, March 1996).

²²⁵Zhang Jianzhi, "Views on Medium-Sized Nuclear Powers Nuclear Strategy," *Jiefangjun Bao*, 20 March 1987, in *FBIS-China*, 1 April 1987, p. K-29.

²²⁶*Ibid.*, p. K-31

meaner," but it was a very long path. PLA analysts were well aware of this reality. They took solace, however, in their understanding that apart from the Soviet Union, the most likely sources of local war on China's periphery did not involve countries with the capability to conduct high-technology warfare at the level demonstrated by Western powers.²²⁷ Whereas this remained true, the opening years of the 1990s were to reemphasize PLA deficiencies.

The Persian Gulf War: Local, Limited War Under High-Tech Conditions

The Persian Gulf conflict of 1991 was precisely the kind of war PLA theorists had been speculatively analyzing for six years. It was a short, high-intensity war fought for limited political objectives within a confined theater of operations. The role of high-technology arms and supporting systems in Operation Desert Storm essentially confirmed earlier conclusions drawn by Chinese analysts evaluating the history of military operations in local, limited wars. What stunned these analysts was the effectiveness of high-technology joint operations. They saw two complementary aspects of modern warfare. First, air operations crushed Iraq's air defenses while blinding and paralyzing Iraqi forces. Second, when the ground war was launched, joint operations used the synergy of multi-service actions to quickly and thoroughly lay waste to opposing forces. To these analysts, it was not simply that PLA weapons and equipment were obsolescent—PLA operational doctrine was seen as equally antiquated.

Preparing for local, limited war had already raised issues of readiness, joint operations, command and control, and sustainability. Coalition military operations during the Gulf War raised these issues to a new and much higher level of significance. As PLA analysts dissected the various components that had contributed to the coalition's stunning military victory, they also concluded that a revolution in military affairs was well under way. PLA operational doctrine was therefore faced with two dilemmas. First, how to improve combat capabilities for current and near-term warfare. Second, how to prepare for the RMA they saw emerging from the Gulf War.

These basic military questions arose as the Cold War ended, the USSR disintegrated, and the United States emerged as the world's dominant political, economic, and military power. These processes matured as Sino-American

²²⁷Zhang Taiheng, "Local War, Development of Weapons and Equipment," *Jiefangjun Bao*, 1 June 1990, in *FBIS-China*, 15 June 1990, pp. 26–27.

relations became embittered by the fallout from the Tiananmen tragedy. Beijing's security analysts concluded that the United States was using its "sole superpower" status to "contain" China and encircle it with rejuvenated Cold War alliances. Henceforth, the PLA's focus for military modernization and the capabilities against which it measured itself would be those of the United States armed forces.

Immediately following the Persian Gulf War, PLA analysts began to write extensively on the issues they now confronted. Strategic, operational, and tactical reconnaissance received special focus.²²⁸ Presumably through analyzing media reports, Western technical military journals, and their own intelligence, Chinese analysts were able to piece together the coalition's entire reconnaissance and intelligence structure from KH-11 satellites through JSTARS to unmanned aircraft. The image PLA analysts gleaned was that U.S. reconnaissance capabilities made critical contributions to strategic decisionmaking, operational effectiveness, missile early warning, bomb damage assessment (BDA), and real-time tactical battlefield decisions. Further, technological enhancements allowed ground and air missions to operate both day and night under all weather conditions. Analysts did comment on the difficulties reconnaissance faced during the Gulf War, with cloud cover providing the greatest obstacle. They also noted that both Iraq and the United States sought to deceive reconnaissance and intelligence collection with activities ranging from smoke generation to electronic warfare. Despite these limitations and potential weaknesses, the reconnaissance and command and control capabilities of U.S. systems were seen as central to the coalition's success.

In contrast to their analyses of limited war before the Gulf War, PLA researchers paid considerable attention to air operations. Both offensive air operations and defense against modern air attack were covered in some detail.²²⁹ It was the devastating air power of the United States and the inability of Iraq to defend critical air defense and command and control nodes that were the PLA's focus. China not only did not have a modern air force, but equally had no way of defending against such an intensive and focused air attack, for air defense had now become much more difficult than it once was. "Stealth" (low visibility)

²²⁸Li Tiran, "Reconnaissance and Counterreconnaissance (sic) in the Gulf War," *Xiandai Bingqi* [Modern Weaponry], No. 9 (1 September 1991), in *JPRS-China Report*, 12 December 1991, pp. 43-47.

²²⁹See, for example, Sun Hongwei, "New Developments in Use of Air Power," *Jiefangjun Bao*, 22 March 1991, in *FBIS-China*, 15 April 1991, pp. 55-57; and Dong Wenxian, "Preliminary Study of Modern Territorial Air Defense," *Jiefangjun Bao*, 6 September 1991, in *FBIS-China*, 7 October 1991, pp. 41-44.

technology and standoff cruise missiles now permitted offensive air operations to avoid surface-to-air missile (SAM) defenses by both flying over them undetected and launching extremely accurate standoff weapons without attempting to penetrate air defenses. Air warfare had become non-linear, with deep attack possible even before air defenses had been suppressed. This was but one of a series of capabilities for which the PLA was totally unprepared.

In 1993, China's then most senior serving officer, General Liu Huaqing, used the Gulf War to demonstrate his forces' extensive deficiencies in an essay published on the PLA's 1 August founding day.²³⁰ Although he made the obligatory reference to the PLA's history of defeating adversaries superior in the instruments of war, General Liu made no effort to disguise his concerns. As he pressed the necessity of modernizing the PLA, the issue of limited defense expenditures came to the fore once more. General Liu clearly argued that additional resources were required and that in a time of peace China should not neglect defense modernization:

We cannot say that it is now peacetime so we can let our horses graze in the south mountains, put our swords and guns in the warehouses, and grasp modernization of the Army after the economy is developed. It takes a long period to carry out research on weapons and equipment and to manufacture them, therefore the thinking that the Army should be modernized only after the country becomes rich is one-sided. If we do that, the gap between us and the advanced standard in the world will become bigger and bigger.²³¹

Furthermore, the PLA had to confront the dilemma that funding the acquisition and development of modern weapons and supporting systems competed directly with yet another harsh reality. PLA living standards were so low that the needs of officers and men could hardly be met. Funds spent to meet these essential needs could not be used for more modern equipment and training.²³² Moreover, the PLA had to face issues it had not confronted before even while there were old problems not yet resolved.

General Liu, however, did set priorities. Resources were to focus on air and naval forces because war on land and sea can no longer be won without effective air power and because China's extensive coastline and maritime territories required an effective navy. Nevertheless, by using the Gulf War as the

²³⁰Liu Huaqing, "Unswervingly Advance Along the Road of Building a Modern Army With Chinese Characteristics," *Jiefangjun Bao*, 6 August 1993 [originally published in *Qiushi*, No. 15], in *FBIS-China*, 18 August 1993, pp. 15-22.

²³¹*Ibid.*, p. 20.

²³²*Ibid.*, p. 21.

standard to measure PLA modernization requirements, Liu was setting a very high standard.

Air power analysts were fully aware of the difficulties they faced. Taking the Gulf War as his point of reference, PLAAF Col. Min Zengfu²³³ noted that as early as 1972, U.S. air operations in Vietnam were complex, high-technology affairs. Reconnaissance aircraft selected targets, Airborne Warning and Control System (AWACS) aircraft commanded the strikes, electronic warfare and defense suppression aircraft destroyed air defense and command and control centers, combat air patrols protected the attacking aircraft, and aerial refueling extended both the range and the time attacking forces could spend over the target. Today, he noted, using even more sophisticated aircraft, munitions, and operational methods, air power can open local wars with speed and effectiveness.

Colonel Min recognized that air forces now conduct operations ranging from sustained, large-scale, independent offensive operations to performing critical roles in joint, multi-service operations. The accuracy and range of airborne munitions are now so good that air power is used to attack critical "nodes" and specific structural elements of the opposing forces. With modern military capabilities based on the coordinated actions of different services and branches, these nodes are the critical links among the various types of weapons and forces. Precision attack on essential information nodes will weaken or even paralyze the ability of opposing forces to conduct joint operations. During the Gulf War, precisely this strategy was effectively applied by coalition air forces.

In joint operations, as the Gulf War demonstrated, U.S. Air Force (USAF) and U.S. Navy (USN) aircraft joined with U.S. Army attack helicopters to open the war. The aircraft were part of a composite strike package that included USN land attack missiles. The aircraft themselves now use long-range, extremely accurate standoff cruise missiles. These capabilities together with space-based and tactical reconnaissance systems permit the intensity and tempo of operations to reach levels never before possible. PLA analysts have concluded that unless such strength is quickly countered, the attacker will seize the strategic initiative.

China's navy suffers from all of the deficiencies seen in its air force. With very few exceptions, its air, surface, and sub-surface combatants are obsolete, and

²³³Colonel Min Zengfu, "A Glimpse at 21st Century Air Combat," *Zhongguo Junshi Kexue*, No. 1 (20 February 1995), in *FBIS-China*, 5 October 1995, pp. 17-24. This discussion is taken from his essay.

the PLAN lacks the doctrine, training, and command and control for multi-service joint operations. PLAN analyses of the Gulf War therefore replicated in tone those of the PLAAF.²³⁴ Naval forces were seen as operating in a multi-dimensional battlespace. Of particular importance, space-based systems for reconnaissance, intelligence, and command and control, when combined with long-range precision strike munitions, gave technologically advanced navies clear combat advantage. Military researchers concluded that naval warfare would henceforth be conducted at long range, including attacks on surface ships, missile defenses, air defenses, and attacks on land- or even space-based targets. Because of its importance, command, control, communications, and intelligence (C3I) will become the focus of electromagnetic attack in the opening stage of naval warfare.

The PLAN, like the PLAAF, understands the serious implications of low-technology weapons and support systems in current and future military operations. But, also like the PLAAF, the PLAN knows it will be many years before it will be able to fulfill its ambition and extend its effective operational area out 200 to 400 miles from China's coast. As a Chinese naval journal observed in 1997: "Having the capability to go into blue water and becoming a blue-water navy are in essence two different things; which is to say there is a long way to go."²³⁵

Doctrine and strategy for the Second Artillery Corps face equally challenging dilemmas emerging from advanced military technologies. These dilemmas originate in the U.S. ballistic missile defense program and confront both the strategic forces and tactical short-range ballistic missiles. China's core strategic deterrence strategy has been based on the principle that even states with overwhelming nuclear power can be deterred from the threat or use of nuclear weapons when threatened with a punitive second strike. Such a strategy does not require nuclear parity. Rather, it requires that the states to be deterred believe that even after absorbing a first strike, China will retain the capability to inflict unacceptable damage in a second strike. Beijing did not see such a strategy requiring large numbers of warheads. Rather, the ability of strategic forces to survive a first strike was considered adequate. Since initial operational capability in 1981, China has deployed perhaps 20 DF-5 full-range (8,060-mile) ICBMs. Twenty DF-4 limited-range (2,945-mile) ICBMs have been deployed

²³⁴See, for example, Senior Col. Shen Zhongchang, et al., of the Naval Military Academy Research Institute, "A Rudimentary Exploration of 21st Century Naval Warfare," *Zhongguo Junshi Kexue*, No. 1 (20 February 1995), in *FBIS-China*, 13 June 1995, pp. 26-32.

²³⁵Zhang Wei, "Ultimately Moving Toward Blue Water," *Jianchuan Zhishi*, No. 1 (January 1997), in *FBIS-China*, 2 April 1997.

since 1980. Beijing's single SSBN carries 12 JL-1 IRBMs with a range of 1,054 miles.²³⁶ Despite a successful sub-surface test launch in 1985, it is unlikely the SSBN ever entered operational service,

Beginning with the Reagan administration's strategic defense initiative (SDI) of 1983, Beijing has seen its deterrent strategy threatened by ballistic missile defense technologies.²³⁷ A national missile defense (NMD) system, even if designed to defeat only a small number of missiles launched by a rogue state or to defend against an accidental launch, would undercut the logic used by Beijing to limit its strategic force size. With NMD on the operational horizon, already-existing pressures from China's strategists to change nuclear doctrine and strategy are granted greater influence within Beijing's security community.²³⁸

Beijing's tactical ballistic missiles are similarly threatened by U.S. TMD programs, especially if the technology should be deployed by Japan and Taiwan. Beijing's use of DF-15 (M-9) missiles as the central component of its coercive diplomacy toward Taiwan in 1995 and 1996 has spurred the interest in TMD. Similarly, although Japan will point to the Democratic People's Republic of Korea (DPRK) as the source of its apprehension, Beijing sees Tokyo's even minimal support of TMD as ultimately designed to undermine China's missile capabilities.

Thus, at both the strategic and tactical level, the credibility of both its nuclear and its conventional missiles is being eroded if not completely undermined from Beijing's point of view. This then places pressure on Beijing to respond in a series of related choices. First, the most obvious choice is to increase the number of missiles in an effort to overwhelm "thin" national BMD and regional TMD. Second, they might develop and deploy multiple warheads for their strategic missiles to place penetration aids (penaids) in the bus, thus eroding BMD capabilities. Third, the PRC could change or modify its strategy and operational doctrine for the use of nuclear forces.

Changing strategic doctrine from its relatively primitive punitive second strike "minimal deterrence" core will be the most problematic, because moving

²³⁶"Natural Resources Defense Council Nuclear Notebook, Chinese Nuclear Forces, 1999," *The Bulletin of the Atomic Scientists*, Vol. 55, No. 4 (May/June 1999) (Internet).

²³⁷For further analyses of China's response to SDI, see Bonnie S. Glaser and Banning N. Garrett, "Chinese Perspectives on the Strategic Defense Initiative," *Problems of Communism*, Vol. 35, No. 2 (March/April 1986), pp. 28–44; and John Garver, "China's Response to the Strategic Defense Initiative," *Asian Survey*, Vol. XXVI, No. 11 (November 1986), pp. 1220–1239.

²³⁸See Iain I. Johnston's "China's New 'Old Thinking': The Concept of Limited Deterrence," *International Security*, Vol. 20, No. 3 (Winter 1995/96), pp. 5–42, for a thorough analysis of the pressure to change China's nuclear strategy.

beyond such strategy makes greater demands of China's R&D and defense industrial capabilities. Doctrine and strategy changes must be accompanied by operational capabilities in order to be effective. In many ways, therefore, the dilemmas facing China's strategic doctrine are the same as those confronting the conventional general-purpose forces. The strategy change most often considered is toward "limited nuclear deterrence" (*you xian he weishi*).²³⁹ Such a strategy is designed to provide greater flexibility in the use of nuclear forces than a countervalue punitive second strike. Minimum deterrence is perceived by some analysts as being too sensitive to a disarming first strike. Limited deterrence is viewed as requiring the capability to deter strategic, theater, and conventional war.²⁴⁰ Operationally, this demands the capability to respond effectively to any level of attack and provide an intra-war deterrent by demonstrating the ability to prevent escalation by managing the response to match different kinds of nuclear attack.

The range of targets is also more extensive than the countervalue "city busting" punitive strikes at the core of minimum deterrence.²⁴¹ Limited deterrence involves counterforce capabilities in addition to countervalue targets. Among those suggested by Chinese analysts are strategic missile bases, command and control centers, and communications hubs. Striking such targets while retaining sufficient forces to control possible escalation requires far more missiles than China currently deploys and far more sophisticated command and control and battle damage assessment capabilities than Beijing has at this time. In short, there is a significant gap between current capabilities and the operational demands of a limited deterrence strategy.

In some ways, force modernization under way since the early-1980s²⁴² will redress some of these deficiencies. Mobile, solid-fueled, strategic, theater, and tactical missiles have quicker response time and greater survivability, especially the road- and rail-mobile DF-41 ICBM which will replace the silo-based DF-5. What is not redressed by these missiles, even if produced in much greater numbers than the current force structure, is a set of other requirements should Beijing shift to a strategy of limited deterrence.²⁴³ First is the requirement to

²³⁹Johnston, "China's New 'Old Thinking,'" pp. 17-23.

²⁴⁰See, for example, Maj. Gen. Wu Jianguo, "The Nuclear Shadow in High-Tech Warfare Cannot Be Ignored," *Zhongguo Junshi Kexue*, No. 4 (20 November 1995), in *FBIS-China*, 18 April 1996, pp. 37-41.

²⁴¹Johnston, "China's New 'Old Thinking,'" pp. 19-20.

²⁴²See John Wilson Lewis and Hua Di, "China's Ballistic Missile Programs: Technologies, Strategies, and Goals," *International Security*, Vol. 17, No. 2 (Fall 1992), pp. 5-39, for an assessment of these programs.

²⁴³Johnston, "China's New 'Old Thinking,'" pp. 31-41.

strike hardened targets, such as missile silos. With a circle error probable (CEP) in the range of 1,000 meters, current accuracy of the DF-4/5 is insufficient for hardened targets. The DF-41 will have to demonstrate much greater accuracy. Second, there must be some kind of space-based early warning and reconnaissance system to warn of a coming attack and provide close to real-time assessment of targets. There is no point in shooting at empty silos. Third, in order to be effective at each rung of the escalation ladder, Beijing will need a significantly larger force structure of ICBMs, IRBMs, and tactical missiles. Fourth, China in a BMD would need some kind of missile defenses to ensure its own weapons survive. Currently, China has no such capabilities and is therefore not equipped to implement a revised nuclear strategy. Perhaps more important for doctrinal evolution, however, is Iain Johnston's conclusion that China's analysts are thinking about the linkage between conventional and nuclear forces in high-tech local wars.²⁴⁴

An RMA with Chinese Characteristics?

Fully understanding it will be many years before China's armed forces have the capability to conduct war effectively over the entire spectrum of conventional and nuclear military operations, PLA analysts have returned to their core doctrine. Nonetheless, defeating adversaries superior in the instruments of war is now recognized to be much more difficult than it once was. In large part, this is because PLA planning is focused on short, high-intensity wars fought for limited political objectives within confined theaters of operations. In these types of conflicts, as the Gulf War convinced the PLA, forces equipped with advanced weaponry exploited by well-trained troops using appropriate joint operations have a potentially overwhelming advantage. Although recognizing there are too few cases to draw a firm conclusion, a PLA analyst observed, "There never has been an actual case of the weak defeating the strong or the inferior defeating the superior" in a high-intensity local war.²⁴⁵

Deficiencies

Chinese military journals and especially field commanders have been frank about the weaknesses that severely constrain their forces' ability to conduct contemporary high-tech warfare. They lack surveillance, warning, intelligence,

²⁴⁴Ibid., p. 42.

²⁴⁵Col. Yu Guohua, "On Turning Strong Forces Into Weak and Vice Versa in a High-Tech Local War," *Zhongguo Junshi Kexue*, No. 2 (20 May 1996), in *FBIS-China*, 3 January 1997.

and target acquisition capabilities ranging from strategic space-based systems to tactical systems for land, sea, and air warfare. The combat strength of armed forces is limited in rapid response, mobility, and the lethality of their weapons systems.²⁴⁶ These deficiencies are compounded by the lack of joint operational doctrine and C3I systems capable of effectively coordinating multi-service operations. Furthermore, the amount of modern arms and equipment available for training is so limited that few units have the basis for exercises to prepare them for joint operations.²⁴⁷ Nor is the PLA's logistics system capable of supporting the levels of consumption created by high-intensity joint warfare.

With the Gulf War as their model, PLA analysts discuss at length a combat environment where information technologies allow space, air, sea, and land to be integrated into a single operational area. The RMA has made this battlespace increasingly transparent, allowing extremely accurate targeting for over-the-horizon (OTH) firepower, integrating both air- and sea-launched long-range precision strike munitions for shock effect. Information technology used for command and control, and to transmit near-real-time intelligence, allows dispersed forces to exploit battlefield opportunities. Because of the importance of information technologies for the prosecution of operations, these analysts have concluded that initiative will be held by forces that achieve electromagnetic dominance. The side that loses this aspect of modern warfare will be rendered "blind" and "deaf." In this manner, the "hard" damage inflicted by munitions is joined and intensified by the soft damage of information warfare.

Trends: Experimenting with Operational Doctrine

PLA writings fully demonstrate that their forces do not meet even 1980s standards for advanced warfare. When they are discussing future development, they are in fact focused on possibly reaching Gulf War standards some time in the twenty-first century. Doctrinal development is therefore also focused on reaching 1991 competencies sometime in the future. In this, today's PLA faces the same dilemma as its predecessors. In facing its deficiencies, "catch-up"

²⁴⁶Senior Col. Huang Xing, "Holding the Initiative in Our Hands in Conducting Operations, Giving Full Play to Our Advantages to Defeat Our Enemy—A Study of the Core Idea of the Operational Doctrine of Our Army," *Zhongguo Junshi Kexue*, No. 4 (20 November 1996), in *FBIS-China*, 20 November 1996.

²⁴⁷Lt. Col. Wu Jianchu (Jinan Military Region Operations Commander), "Joint Operations—The Basic Form of Combat on High-Tech Terms," *Zhongguo Junshi Kexue*, No. 4 (20 November 1995), in *FBIS-China*, 4 April 1996; and Lt. Gen. Chen Bingde, Commander of the Nanjing Military Region, "Intensify Study of Military Theory to Ensure Quality Army Building; Learning From Thought and Practice of the Core of Three Generations of Party Leadership in Studying Military Theory," *Zhongguo Junshi Kexue*, No. 3 (3 March 1998), in *FBIS-China*, 10 March 1998.

holds a more significant place in their analyses than "leapfrog" as a measure of improvement and achievement.

There does appear to be, however, a school of thought that sees information warfare as a way of bypassing all the deficiencies most PLA commanders and researchers recognize. Sometimes these are referred to as "killer" weapons or "trump cards" that will compensate for PLA weaknesses and endow China with "great deterrent power."²⁴⁸ Others argue that although IW presents a great challenge to the PLA, it has "also brought about a great opportunity to skip over development" and move directly into preparation for information warfare.²⁴⁹ Such essays do not reflect the mainstream of argument in China's military journals. For the most part, military journals reflect concern and apprehension over the distance the PLA has to travel before it achieves late-twentieth-century qualities, let alone twenty-first-century capabilities. In these analyses, IW is viewed as a new component of warfare that must be integrated with other advanced technology arms and equipment to have its greatest impact on war. It is not seen as a magic weapon that once mastered will transform PLA weaknesses into invincible strengths.

Given the military leadership's clear understanding of PLA deficiencies in essentially all aspects of late-twentieth-century warfare and the formidable task it confronts in the transition toward twenty-first-century warfare, much of the doctrinal analysis found in China's military journals over the past five years is best viewed as experimental. This conclusion is supported by PLA criticism of its own training programs as late as 1998 and 1999.²⁵⁰ PLA training is recognized as not meeting the requirements for joint high-technology warfare. In part, this is because most units do not have advanced weapons and equipment, therefore they continue with outmoded training practices. Furthermore, there is a strong propensity for the different services to stay with their old single-service training methods. There is also a tendency in these commands to see high-technology equipment as "ornaments" and simply not integrate them into rigorous future-oriented training programs. Finally, there is a proclivity not to take training seriously in peacetime. To correct this situation, PLA critics maintain, training must be completely revised. To prepare for future

²⁴⁸See, for example, An Weiping, "Thoughts on Developing Armaments by Leaps and Bounds," *Jiefangjun Bao*, 6 April 1999, in *FBIS-China*, 6 April 1999.

²⁴⁹Wang Jianghuai and Lin Dong, "Viewing Our Army's Quality Building From the Perspective of What Information Warfare Demands," *Jiefangjun Bao*, 13 March 1998, in *FBIS-China*, 16 March 1998.

²⁵⁰See, for example, Zhang Guoyu and Wang Boming, "Carry Out Scientific and Technological Training and Create Brilliant Historic Achievements," *Jiefangjun Bao*, 19 January 1999, in *FBIS-China*, 2 February 1999.

war it is necessary to make training joint and transition from training where two armies confront one another to focusing on "network" confrontation. Although this will be difficult, the best way to make the transition is for military research institutes to plan new training content and methods and then have small units test them at experimental training centers.

This continuing problem with outmoded training methods may well have led Jiang Zemin, as chairman of the Central Military Commission, to promulgate a "new-generation" operational ordinance in January 1999.²⁵¹ This ordinance is specifically written to focus PLA training on preparation for "local war under modern technological, especially high-tech, conditions." Although recognizing the PLA's outdated arms and equipment, the ordinance focuses on joint operations and logistics and directs the armed forces to prepare for "information, electronic, mobile, and special warfare." If it is correct that an army fights as it trains, then this ordinance issued by the most authoritative source may well have considerable consequence for the PLA's operational skills. It will take over a decade for the PLA to master the skills required, and acquire the arms and equipment necessary, to conduct advanced technology warfare, but the direction of a future capability is authoritatively stated.

Despite its experimental or even theoretical basis, the basic pattern of future doctrine, especially at the operational level of war, does form a clear trend. First, gaining battlespace initiative is seen as essential in defeating a distinctly superior adversary²⁵² and will require offensive and possibly preemptive operations. This approach fits the PLA's tradition and experience. At the operational level of war, Mao Zedong placed primary emphasis on gaining the initiative, directing his field commanders to set this as a primary military objective. In particular, the commander was to win the first battle of the engagement, for this gave him great flexibility.²⁵³ Flexibility in employing his forces was seen by Mao as the clearest indicator of a commander holding the battlefield initiative.

PLA operational analysis has folded information warfare into its central focus on offensive and preemptive operations. Future offensive operations will consist of both "hard" and "soft" attack, but the soft attack of information

²⁵¹Editorial, "Basic Guideline for Our Army's Combat Drill in the New Period—Written on the Promulgation of Operational Ordinance of a New Generation," *Jiefangjun Bao*, 25 January 1999, in *FBIS-China*, 1 February 1999.

²⁵²See, for example, Huang Xing, "Holding the Initiative in Our Hands."

²⁵³Mao Tse-tung (Mao Zedong), "On Protracted War" (May 1938), in *Selected Military Writings of Mao Tse-tung* (Peking: Foreign Languages Press, 1972) [henceforth *Selected Military Writings*], esp. pp. 228–254.

warfare is of increasing importance. The changing technology of war has reached the point where information-based technologies define the degree of superiority held by the adversary.²⁵⁴ IW is consequently not viewed as a “stand-alone” category or type of warfare. IW is viewed as a central component of offensive operations that must be effectively employed if the PLA is to seize the initiative in the opening phase of the campaign.

In the same manner that in 1978 Marshal Nie Rongzhen identified Soviet forces’ central weakness was their dependence on armored assaults for deep penetration, so current PLA analysts identify the critical weakness of advanced technology forces is their growing dependence on information technologies. Their analyses focus primarily on U.S. capabilities—“our new rivals.”²⁵⁵ This growing dependence on information technologies has created “nodes” linking together systems acquiring, transmitting, and processing information. Offensive operations attacking command, control, communications, computers, and intelligence (C4I) nodes are seen as eroding, if not disrupting, U.S. “hard” attack capabilities. In this sense, attacking critical nodes is seen as a force multiplier, for reducing the opponent’s capacity to conduct operations effectively increases the PLA’s offensive strength. Attacking information nodes is defined as a form of “asymmetric warfare.”²⁵⁶

Attacking these nodes is also viewed as an extension of Mao Zedong’s principle that short battles of annihilation must be fought to gain the initiative on the battlefield. Attacking C4I nodes degrades the combat effectiveness of units on a non-linear battlefield, thereby performing the same operational function as short battles of “annihilation” in the 1930s and 1940s.²⁵⁷ However, Mao’s principle of “accepting the first blow” (*houfa zhiren*) has perhaps been replaced with “gaining the initiative by striking first” (*xianfa zhiren*).²⁵⁸ That “first blow” is to be directed at information nodes in the quest for information dominance.

²⁵⁴The following discussion has benefited from Maj. Mark Stokes, USAF, *China’s Strategic Modernization: Implications for U.S. National Security* (USAF Institute for National Security Studies, October 1997); and James C. Mulvenon, “The PLA and Information Warfare,” in James C. Mulvenon and Richard H. Yang, *The People’s Liberation Army in the Information Age* (Santa Monica: RAND, 1999), pp. 175–186.

²⁵⁵Huang Xiang, “Holding the Initiative in Our Hands.”

²⁵⁶See, for example, an article (no title) by Professor Liu Kejun presented at the 15 September 1997 Defense Modernization Symposium organized by the Chinese Electronics Society, Beijing Yuguangtong S&T Development Center, and *Zhongguo Dianzi Bao* held at the PLA General Staff Department Research Institute 61, 24 October 1997, in *FBIS-China*, 14 January 1998.

²⁵⁷Maj. Gen. Zhang Bibo, PLAAF, and Senior Col. Zhang Song, PLAAF, “New Subjects of Study Brought About By Information Warfare—Summary of an Army Command Seminar on ‘Confrontation of Command on Information Battlefield,’” *Jiefangjun Bao*, 11 November 1997, in *FBIS-China*, 20 December 1997.

²⁵⁸Lu Linzhi, “Preemptive Strikes Crucial in Limited High Tech-Wars,” *Jiefangjun Bao*, 14 February 1996, in *FBIS-China*, 14 February 1996.

Both “soft” and “hard” weapons will be used to attack information infrastructure. Soft attack uses jamming and other electronic warfare means, including computer viruses.²⁵⁹ The preferred hard attack weapons are standoff precision-guided munitions (PGM) using information technologies for their accuracy. Such munitions can be air-, land- or sea-launched and are directed to their target by a variety of means, including terminal guidance, satellite guidance, and other information-based technologies. Of critical importance, given their targets, is the ability of PGMs to launch outside the adversary’s defenses. Furthermore, the range and accuracy of cruise missiles have convinced many Chinese analysts that strategic attack can now be launched at any time by aircraft and/or ships, granting distinct advantage and possibly the initiative to the attacking forces.

Hard Choices: Focusing on the Doctrine-Capability Gap

As PLA researchers look toward future wars, they know they are faced with significant problems in implementing the operational doctrine that has emerged over the past half decade. First, although this doctrine has focused on offensive and possible preemptive operations, the PLA itself is severely lacking in defensive capabilities. Whereas it is very unlikely China’s armed forces will for many, many years become as dependent as the United States on information networks, the PLA will be exposed to the same kind of IW attacks it contemplates inflicting on U.S. forces as it moves toward truly joint operations. There is very little discussion and analysis of defense in information warfare beyond recognizing its importance. Building and/or acquiring both offensive and defensive IW capabilities is going to be both difficult and expensive.

Second, for all the discussion of future warfare, China’s military leadership knows its forces remains seriously deficient in the weapons and equipment required for any near-term military conflict beyond a clash on China’s land borders or a minor fracas in the South China Sea. These contingencies, with the exception of an extremely improbable border war with Russia, can be handled competently by the PLA’s current capabilities. As it contemplates a possible confrontation with the United States, which is clearly present in the substance of most essays focused on defeating superior adversaries, then all of the deficiencies that cause such apprehension within the PLA come to the fore.

²⁵⁹Wang Bao Cun, “An Informal Discussion of Information Warfare,” *Jiefangjun Bao*, 13 June 1995, in *FBIS-China*, 25 August 1995, pp. 39–41.

Neither the PLAAF nor the PLAN has the capability to confidently confront the United States in a showdown over Taiwan. Certainly, it is possible to conceive of scenarios where the United States did not come to Taipei's assistance, but China's political and military leadership cannot plan on such a basis. Should a military confrontation occur within a decade, neither China's air force nor its navy could contemplate seizing the initiative in the opening stage of a campaign. Simply stated, the vast majority of China's ships and aircraft are obsolete by any standard. They are simply not capable of conducting the kind of war their doctrine envisions: a short, high-intensity conflict fought for limited political objectives within a confined theater of operations. Depending on tactical ballistic missiles to force Taipei's surrender before the United States has the opportunity to intervene is equally risky, and perhaps undermined by Yugoslavia's ability to resist NATO's PGMs for 11 weeks.

The doctrine-capability gap created by the PLA's deficiencies is incredibly expensive to overcome in the near term. It embraces all types of armaments and equipment ranging from space-based systems to advanced submarines and an extensive range of defensive and offensive systems from air defenses to long-range PGMs. This is not to suggest that the PLA will or even intends to replicate the range of military capabilities represented by U.S. armed forces. It does suggest that self-generated doctrinal trends require a far more sophisticated and complex force structure than the PLA currently possesses. Furthermore, to the extent the PLA moves toward more advanced technologies for its weapons, ships, and aircraft, it places greater demands on training, maintenance, and logistical support.

China's military leadership therefore faces hard choices as it seeks to balance long-term requirements for future wars with the demands of potential near-term military conflicts. Acquisitions under way for the past decade demonstrate, however, that doctrine is influencing, if not directing, force modernization programs. Space programs for reconnaissance, surveillance, and communications are under way.²⁶⁰ Air power improvements can be seen in the F-10/Su-27 programs. Given China's long search for aerial refueling and AWACS capabilities, it would be prudent to assume that these programs are progressing. Naval forces are being improved by the development and acquisition of more competent surface and subsurface combatants supported by additional under way replenishment ships. Cruise missile programs continue to improve aircraft-, ship-, and land-based weapons. Long-range land attack cruise missiles are certainly being pursued. Cruise missile development

²⁶⁰Stokes, *China's Strategic Modernization*, Appendix Three.

is matched by tactical ballistic missile programs. Ground force improvements are being made in rapid reaction forces, including paratroop and heliborne units.

There is no sign that any of these force modernization programs are being pursued on a "crash" basis. Rather, and despite two decades of continuing protest by the military leadership, improvements are being made slowly. In part, this reflects continuing budget constraints. Resources for defense modernization have been steadily increasing for the past decade, but not to the extent the PLA would desire. Slow progress also reflects the continuing limitations of China's defense industrial base. Equally important is the reality that the PLA itself has faced difficulties in developing and implementing operational doctrine integrating advanced technology weaponry and equipment. Once doctrine is accepted, then the PLA has been required to make the difficult adjustments in organization and training to implement the new doctrine's operational requirements.

Far more important for the long term is that even with all the difficulties it has faced, and continues to confront, the PLA is clearly in the process of transition to a more effective defense force. More effective because its force structure is now more flexible and capable of responding to a wider set of contingencies than it was 20 years ago. The road ahead will be as difficult as the path the PLA has trod over the past two decades, but the objective of doctrinal change and defense modernization has been distinctly defined.

Retrospect and Prospect

Transition to the PLA's new doctrinal imperatives involved 20 difficult years. Perhaps no more important to the PLA's renovation was reconstruction of the officer corps and the revitalization of its military research institutes. Doctrinal innovation could not have taken place without an officer corps capable of understanding the complex demands of contemporary and future warfare. Mao Zedong's two decades of zealotry had severely undermined this capability. By focusing on personnel reforms first, Deng Xiaoping laid the foundations for a modern PLA. The PLA National Defense University established in 1985 is China's first joint service center of professional military education, and the Academy of Military Science leads the way in providing analyses of current and future military strategy and operations that direct change in PLA doctrine. Officers now assuming leadership roles in command and staff have been educated by these institutions. Their corporate understanding of what is

required to achieve combat effectiveness in the next century will be critical in determining the PLA's future.²⁶¹

In his strategy for military modernization, Deng was assisted by senior officers who had their first taste of modern, high-intensity warfare as commanders in the Korean War. Following that war, they had played significant roles in the PLA's first modernization programs under Soviet tutelage. Their experiences made them fully aware that reconstructing the PLA's "software" was essential for any effective transformation to occur and they became the driving force of Deng Xiaoping's programs.

As doctrinal change has taken place, it has been indelibly marked by Mao Zedong's core contributions from the 1930s. First, the PLA shall not be passive in the face of superior adversaries. Second, although subject to considerable operational adaptation, *active defense*, remains at the center of the PLA's basic doctrine, as it has since the 1930s. This doctrine directs operations to be designed on the principle of seizing and sustaining battlespace initiative. What is remarkable about this core doctrine is that it was specifically conceptualized to offset military weakness and is applied today for the same reason.

The most difficult change to absorb is the transformation of the PLA from a ground-force-dominated institution to a joint service force. It is evident this transition is far from complete. Raising the profiles of the PLAAF and PLAN and moving them from junior partners to equal status with the ground forces will continue to be a difficult passage. Jiang Zemin's "new-generation" ordinance may well ease the process, but it will remain troublesome. Getting the tradition-bound ground forces to accept the navy and air force as equal partners will take some time.

Changing the substance of doctrine to include advanced technology arms and equipment distributed among the four services will be equally challenging. Whereas the principle of extracting the synergistic effect of individual service capabilities through joint doctrine is accepted, applying the principle is difficult. Allocating service resources and establishing command and control procedures to ensure coordinated effort in the battlespace is a complex undertaking. This becomes even more so when force projection is part of the operation. The PLA has no deep well of experience to draw on; thus coordinating air, ground, and naval services in joint operations will require extensive training after establishing the doctrine.

²⁶¹For a thorough analysis of the transformation of the PLA officer corps, see James C. Mulvenon, *Professionalization of the Senior Chinese Officer Corps* (RAND: National Defense Research Institute, 1997).

Logistical demands in joint operations are yet another continuing challenge for the PLA. Essays in China's military journals demonstrate that the awesome consumption of fuel, ordnance, and other consumables in contemporary warfare is recognized. These same essays indicate that logistical support for high-intensity joint operations is receiving attention, but preparing and sustaining the flow of consumables for joint offensive operations is far from an easy task to master.

The RMA adds yet another layer of complexity. If information warfare is included within RMA parameters, a PLA that has yet to institutionalize joint operations has to undertake folding in technologies associated with the RMA. It is for this reason that most essays seeking to define the RMA's effect on the conduct of war draw their inspiration from emerging U.S. doctrine.²⁶² There is yet no compelling evidence that PLA analysts have developed doctrine for the application of RMA technologies.

A distinct pattern emerges from these continuing problems beyond persistent deficiencies in arms and equipment. At each stage of change, whether it was revising strategy for defense against the USSR in 1978; the shift to local, limited war in 1985; or the RMA shock that came out of the Gulf War; the PLA faced new demands before transition to the previous requirements had been completed. Despite continuity in basic military doctrine, each new strategy required revision of operational doctrine. These revisions required organizational, training, and logistics changes. Thus a major difficulty the PLA has faced over the past 20 years has been the absence of any period of stability in which it could complete the organizational, training, and logistics changes required for a changed strategy and operational doctrine. This instability added immeasurably to what was already a demanding task—preparing an obsolescent PLA for modern war. If China's armed forces had been able to settle into a single strategy for two decades, no doubt progress would have been easier and quicker. Beijing's response to the changing international and military environment permitted no such stability.

All of these impediments notwithstanding, PLA operational doctrine over the past 20 years has been the driving force behind its transformation. In the face of what are daunting obstacles, the PLA has sustained its doctrinal evolution. This is as true for strategic nuclear forces as it is for the conventional general-purpose forces. The simple reality that PLA military doctrine is designed to compensate for these deficiencies is perhaps more important than the fact that

²⁶²Mulvenon, "The PLA and Information Warfare," pp. 9–13.

the PLA's arms and China's defense industries cannot match the highly evolved levels of the United States or Japan. If the next two decades continue and build on the degree of transformation the PLA has experienced for the past 20 years, then Asia's military balance will be equally transformed. Whether this is for good or ill is yet another question.

5. Commentary on Doctrine

By David M. Finkelstein

The popularization of military knowledge is an urgent task for the Party and the whole country. We must now pay great attention to all these things, but most of all to the theory of war and strategy. I deem it imperative that we arouse interest in the study of military theory and direct the attention of the whole membership to military matters.

—Mao Zedong, 1938²⁶³

Why Doctrine Matters

In Western military parlance, doctrine consists of the fundamental principles that guide military commanders and their staffs in planning and executing the application of military force to *achieve military objectives*. This is not to be confused with strategy, which is concerned with linking those military objectives to a desired political-military end state, or tactics, which focus on the employment of units in combat.²⁶⁴

Doctrine is the foundation for planning campaigns, which are “a series of related military operations aimed to achieve strategic and operational objectives within a given time and space.”²⁶⁵ It assists senior commanders and their staffs in beginning to conceptualize courses of action: how they will employ the military means at hand and in what sequence to achieve which key operational objectives. In essence, doctrine is a critical component of the operational art and the “linkage of tactical means to strategic ends.”²⁶⁶

Doctrine is important to military organizations and students of military organizations for other reasons:

²⁶³Mao Zedong, “Problems of War and Strategy” (1938), in *Selected Military Writings of Mao Tse-Tung* (Beijing, Foreign Language Press, 1967), p. 282.

²⁶⁴For the definition of tactics and other military terms as defined by the U.S. defense establishment see Joint Chiefs of Staff, Joint Pub 1-02, *Department of Defense Dictionary of Military and Associated Terms* (U.S. Government Printing Office, 23 March 1994).

²⁶⁵Joint Pub 1-02, p. 60.

²⁶⁶U.S. Army Field Manual 100-5, *Operations*, 4 April 1997 (Draft), p. i.

- Within a military organization the study and internalization of one's own doctrine provide a common baseline of understanding on which complex operations can be built and variations tailored to unique situations. "How we fight" in general is the starting point for "How we will fight this particular campaign."
- Doctrine is often the foundation for professional military education for senior officers. And doctrine is more often than not the basis for training in peacetime. It provides broad principles that in turn require both large and small units and their commanders and staffs to master specific activities to standard as a baseline for professional proficiency.
- Doctrine is often the driving force behind force structure and systems procurement decisions.
- Finally, a military's current doctrine usually provides a pretty good window into what kinds of wars or campaigns a military organization anticipates it will have to fight in the near term.

More often than not, military organizations possess or profess multiple doctrines that exist side by side; especially if they face multiple, complex, and diverse missions. For example, in the U.S. armed forces today "joint doctrine" (to include service doctrine) as espoused by the Joint Publications series mostly addresses the questions associated with a Major Theater War (MTW). However, a separate set of doctrinal principles exists for Military Operations Other Than War (MOOTW). Moreover, most militaries, while continually refining current doctrine, engage in developing future doctrine based on anticipated changes in the security environment, the changing nature of war itself, and the availability of new technologies. Another example from the United States would be the promulgation of *Joint Vision 2010*.

In short, a military's current doctrine describes how in ideal circumstances that military will likely wage war in the present and the doctrinal writings and ruminations of its operational intellectuals (for lack of a better term) often provide a window into how that military would like to wage war in the future.

Why Doctrine Is Important for PLA Watchers

For many of the reasons stated above, PLA watchers, regardless of their particular or specific interests, should attempt to keep an occasional, glancing eye on Chinese military doctrine, especially refinements or changes. But there are also reasons specific to China and the Chinese defense establishment that suggest the wisdom of keeping one's eye on doctrinal issues.

- First, the PLA has not engaged in any significant combat operations since the Vietnam incursion in 1979.²⁶⁷ Unlike the PLA's continuous ability to study the U.S. armed forces across the spectrum of conflict, no one has been able to observe the PLA "at war" for over two decades. Consequently, keeping abreast of PLA doctrinal thinking, doctrinal changes, and developments must be a starting point for thinking about how the PLA plans to fight its next war. There is no question that tracking new PLA weapons systems acquisitions and unfolding defense R&D programs are an absolutely critically important issue for study. But an equally important question is "how do we think these systems will be employed?"
- Second, in China's highly centralized Party-army system significant changes in doctrine can provide a window into: (1) the civil-military elite dynamic within the national leadership, and (2) significant changes in Beijing's strategic world assessment. No one in the United States would expect doctrinal changes in the armed forces to require the personal and public imprimatur of the president. This is the domain of military professionals. Yet in China, all of the major doctrinal shifts of the past have required the endorsement of the current national leader. Doctrine does not become "official" until a Mao, a Deng, or a Jiang lends his prestige to it. In some cases the national leader has imposed the need for doctrinal change on the PLA (Deng's prodding in the 1980s). In some cases it has been the military which, apparently, has had to "borrow" the prestige of the national leader to justify doctrinal change to those below in the PLA (Jiang Zemin and "Local Wars Under Modern High-Tech Conditions" come to mind). Moreover, as in most countries, doctrine in China has been adjusted over the years to account not just for advances in military technologies, but for changes to the perceived national security environment. In China, such an evaluation is as much a political decision as it is a military-analytic assessment, and the ramifications reach far beyond the realm of military matters.
- Third, an understanding of PLA doctrine can sometimes be used, albeit judiciously, as a predictive device for students of the PLA to speculate about future required reforms and modernization programs. In a recent article in *Zhongguo Junshi Kexue*, Chief of the General Staff

²⁶⁷During a May 1999 conference held at the Center for Naval Analyses on the history of PLA warfighting (1949 to the present), the group of assembled historians, warfighters, and PLA watchers held surprisingly diverse opinions on whether the PLA's Vietnam campaign in 1979 was a disaster or a well-executed operation that achieved its military and political objectives.

Department Gen. Fu Quanyou made this point quite clearly when he wrote that “the basic criterion for testing and measuring the success or failure of Army building [is] whether or not it is conducive to winning a local war in the context of modern technology, especially high technology.”²⁶⁸

- Finally, by way of brief discussion, our assessment of whether the PLA is capable of enabling its doctrine is one potential measure, among others, to help us assess the operational “state of the PLA.”

This last point provides the opportunity to segue to some brief comments about Paul Godwin’s excellent chapter.

The Chapter at Hand

As we look over the last 20 years of PLA watching no one in our field has done more to inform our views or shape the debate about the state of PLA strategic and doctrinal thinking than Paul Godwin. To make the case, take a bibliographical excursion back to 1977 and review his Air University monograph, *Doctrine, Strategy, and Ethic: The Modernization of the Chinese People’s Liberation Army*²⁶⁹ and follow the trail through the years to 1996 and what I consider one of his most comprehensive articles, “From Continent to Periphery: PLA Doctrine, Strategy, and Capabilities Toward 2000” in *The China Quarterly*. Frankly, my comments on his chapter are not by way of criticism but an inadequate attempt to underscore what he has highlighted, discuss the attendant implications, embellish (if that is possible) some of his insights, and perhaps offer some of my own thinking *and confusion* on the issue of PLA doctrine.

A Specific Addition to Godwin’s Commentary on Causes for Doctrinal Shift

The author, correctly in my view, reminds us that in the last two decades one of the fundamental shifts in China’s national military strategy has been the PLA’s turn of attention from a continental strategy to a peripheral and maritime

²⁶⁸Fu Quanyou, “Deepen the Study of the Characteristics and Laws of High-Technology Local Wars and Raise the Standard of Guidance for Winning High-Technology Local Wars of the Future,” *Zhongguo Junshi Kexue*, 20 February 1999, pp. 6–14 (as carried by *FBIS* 1 July 1999).

²⁶⁹Paul H. B. Godwin, *Doctrine, Strategy, and Ethic: The Modernization of the People’s Liberation Army* (Maxwell Air Force Base: Air University, 1977).

strategy. To the three reasons he has offered to explain the shift (revised defense strategy against the Soviets in the 1970s, the major doctrinal shift in 1985 to local wars, and the Gulf War in 1991) I would add a fourth which is quite obvious but important nonetheless—the shift in Beijing's economic center of gravity. In the 20 years since China's reform and opening up, China's economic center of gravity has shifted from the industrial northeast and the deep interior to China's littoral. From Dalian in the north to Hainan in the south, the essence of China's economic strength now resides on its eastern seaboard, exposed to the sea and in need of defense.

An Observation About the PLA and the Enemy Operational Center of Gravity: Source of Weakness or Source of Strength?

Godwin relates a very interesting comment by Nie Rongzhen in the 1970s in which the marshal refers to Soviet armor as their "Achilles heel" and Godwin states further that this type of operational analysis is in line with the traditional PLA approach of identifying the enemy's "core weakness." The reason I find Nie's comment so interesting is that U.S. planners probably would have identified Soviet armor as the Russian operational center of gravity (COG) just as the Republican Guards were considered the Iraqi operational COG during the Gulf War; in other words, their core *strength*. Where the U.S. planner sees the operational COG as the enemy's critical source of strength, the Chinese, if Godwin's argument is correct, view the enemy's COG as their source of weakness. The implication is that both the United States and the PLA would want to destroy or neutralize the Soviet armored forces but perhaps do it differently. Nie's statement is that the PLA would try to bleed the logistics supporting the armored force, whereas the United States would probably focus on trying to "kill" the armored forces proper. This may be an excellent example of how the weak wage war against the strong (China vs. USSR at the time) versus how the strong might fight the strong (United States vs. USSR). What is of further interest to me in this passage is the current stream of PLA writing about Information Warfare. PLA theorists seem to have identified U.S. C4I as the "core weakness" of the U.S. armed forces. Perhaps so. But if that "core weakness"—C4I—is not also the operational COG of the U.S. armed forces, would the PLA, even if they successfully attacked C4I, have really destroyed the ability of the United States to fight and impose its will (operationally) on the PLA? I leave that an open question. However, PLA planners should be aware that military history is replete with examples of the disasters that befall

commanders who incorrectly identify the enemy COG.²⁷⁰ My point, however, is this: Do we feel we understand how the PLA approaches identification of the enemy operational COG or even if this concept as studied in the West is applicable?

Themes and Implications Within the Chapter

Within Godwin's chapter there are four themes concerning Chinese doctrinal developments over the years that are worth underscoring.

The Weak versus the Strong: The first theme is that the enduring challenge to PLA military planners throughout its history (1927 to present) has been having to plan fighting technologically superior enemies. Whether the Kuomintang (KMT) in the civil wars, the Japanese, the Americans in Korea, or preparing for a war with the Soviets, the PLA has always faced better-equipped foes. But, from their perspective, up until now at least, they have muddled through quite well. For example, the PLA "victory" over the U.N. Command in Korea is a source of considerable and continuing pride. Today, the PLA faces the same challenge. However, the situation is becoming more complicated for Chinese planners. In addition to specific threat-based planning from potential enemies on its periphery—Vietnam, India, Russia, and the United States—the increasingly technical nature of modern warfare itself has compounded the problem for the Chinese. And, as Godwin indicates, PLA planners may seem to be questioning how long mere faith in solid operational practices can suffice in the absence of the critical wherewithal of modern weapons systems. Unlike the 1950s, when "doctrinal adjustment followed the weaponry being acquired" (Godwin, p. 1), PLA doctrine today seems to be anticipating weapons acquisitions before the fact. To pose the question, then, "To what degree is current PLA doctrinal thinking for fighting Local Wars Under Modern High-Tech Conditions (LWUMHTC) a doctrine developed today for the weapons systems fielded at some point in the future?" Is what we are reading about the PLA today equivalent to the United States *Joint Vision 2010*? If we are reading about the PLA's future doctrine, then what is their doctrine today? How wide or narrow is the doctrine-capabilities gap? These questions are really among the most relevant in our studies and debates on this subject.

Always Playing Catch-Up Ball: A second theme we derive from Godwin's chapter is that PLA doctrinal changes (in theory) have occurred before the PLA

²⁷⁰For a superb look at the issue of the COG in war see Maj. Kevin Giles (USA) and Capt. Thomas P. Galvin (USA), *Center of Gravity: Determination, Analysis, and Application* (Carlisle, Pa.: U.S. Army War College, January 1996).

has been able to make the previous shift (in reality). The best example Godwin offers is the 1985 shift to Local Wars doctrine being adopted even before the PLA could make the shift to a forward defense doctrine against the Soviets in the late-1970s. While constantly shifting doctrinal approaches have the potential to cause chaos if they are made too quickly, I do not see that this has necessarily been all that troublesome to the PLA for two reasons. First, actual change in the PLA seems to take so long that the shift in 1985 may have taken place before any real movement had actually occurred to accommodate the change in the late-1970s from deep defense to forward defense (no time and effort wasted is little or nothing changed anyway). Second, at least since 1985 the basic directions of the changes have been the same. Specifically, I view the doctrine accompanying Local Wars Under Modern High-Tech Conditions merely a variation on the doctrinal themes associated with Local Wars Under Modern Conditions.

The Real Challenge Remains Enabling the 1985 Doctrinal Changes: While Godwin does not explicitly state it this way, a third major theme I derived from his chapter is that the real challenge the PLA still faces is enabling the doctrinal shift to comport with the basic decisions of 1985—planning to fight local, limited war (*jubu zhanzheng*) as opposed to “early, major, and nuclear war” with the Soviets. For my part, Godwin made clearest the implications of the importance of doctrine due to this shift in his 1992 article, “Chinese Military Strategy Revised: Local and Limited War.”²⁷¹ With this shift (*jubu zhanzheng*, 1985), the onus was now placed on the shoulders of the military region commanders to wage autonomous campaigns. Consequently, I see this fundamental change as a turning point in the importance of operational doctrine for the PLA. Whereas previously one could argue that the PLA had a military strategy, principles of war, and tactical techniques that were adequate for their warfighting, the need for doctrine in the Western sense of the term (at the operational level of war) may have finally come into its own. Moreover, many of the deficiencies under which the PLA has labored and which made this doctrinal shift difficult still pertain. Specifically, the PLA is still deficient in joint operations, combat logistics and sustainability, long-range interdiction, and C4I in both its hardware and software aspects. Using 1985 as a major benchmark is interesting for another reason as well—thinking about how far the PLA has or has not come in closing its doctrine-capabilities gap. In other words, if the PLA’s post-Gulf War variant of Local Wars (Local Wars Under Modern High-Tech Conditions) is the benchmark for progress in PLA reform, the gap seems much wider than if one considers how far the PLA actually has come since 1985.

²⁷¹ ANNALS, AAPSS, January 1992, pp. 191–201.

The gap is still there, but the PLA of 1999 is a far cry from the PLA of 1985 at the inception of the shift to Local Wars doctrine.

Offense as a Constant in PLA Operational Doctrine: A final theme I think worth highlighting, and one that Godwin often reminds us of, is that a constant in PLA doctrinal thinking over the decades has been its emphasis on offensive operations. The concept of the “Active Defense” (*jiji fangyu*) goes back as far as 1936, when Mao expounded on its characteristics as really meaning that the army rejects passive defense and that even when China is strategically on the defense its operations must remain offensive (Mao: “Active defense is also known as offensive defense”).²⁷² Historically, the PLA has never shirked taking offensive action even against a technologically superior enemy. Korea is an excellent example. The offensive-oriented nature of the PLA at the operational level of war is the fundamental characteristic against which past, current, and future reforms should be measured, not the emphasis placed on China’s defensive national military strategy, which Beijing is quick to emphasize in public venues meant for foreign consumption. It is, I believe, precisely because PLA operational doctrine is oriented to the offense that they themselves worry about their doctrine-capabilities gap.

Questions About Terminology and Describing Doctrinal Principles

In this section I would like to complicate and probably confuse the discussion on doctrine by raising first the issue of terminology and then briefly addressing what we know or do not know about PLA doctrine.

The Issue of Terminology

Discussing Chinese operational and doctrinal concepts is difficult enough given the opaque nature of their system. It is complicated by the language barrier and, I believe, a lack of parallelism in terminology. This critique began by using U.S. military terminology to discuss the importance of doctrine. Is there a name for China’s current operational doctrine? There probably is, but one gets various answers as to what it is. In his chapter, Alexander Huang refers to “People’s War” as the PLA military doctrine. Some people refer to Local Wars Under Modern High-Tech Conditions as the PLA’s doctrine. In my own chapter for this conference last year, I used “Active Defense” to describe the PLA’s

²⁷²“Problems of Strategy in Revolutionary War,” in *Selected Military Writings of Mao Tse-Tung* (Beijing: Foreign Languages Press, 1967), p. 103.

operational doctrine. This does not comport with the PLA's usage that refers to the Active Defense as their "military strategy." Chinese military writers often discuss military strategy and military tactics, but rarely use the term *doctrine* as found in the West—Alexander points this out as well, I believe. Alternately, I am starting to think that the Chinese use the term "Military Theory" to mean national military strategy, "Military Strategy" to mean operational doctrine, and "tactics" to mean tactics (thank goodness for one out of three). I remain thoroughly confused and could benefit from a study that discusses nothing more or less than the meaning of the Chinese terms.

Until I can benefit from such a study, I am going to continue to think of the "Active Defense" as the title for the PLA's operational doctrine. Without revisiting the definitions, this is because we should be interested in the fundamentals of how the PLA will use military force to achieve military objectives. As Godwin has shown over the years it is the "Active Defense" that has been modified to account for the changes in the nature of war and the types of wars that the PLA anticipates it will fight. I am sure there will be many that will take exception to my clinging to Active Defense as the descriptor of PLA operational doctrine, but I am highly susceptible to counter-arguments and can be persuaded to "get in line" if there is indeed a general line to which we are adhering on this issue.

Identifying Doctrinal Principles

Actually, it is not the semantics that ultimately should interest us about PLA operational doctrine—it is the essence of that doctrine that should be of interest. How does the PLA plan to wage its campaigns? This is really the only question that matters. So while we can argue or disagree about how to label PLA operational doctrine, it is the doctrine itself that we must understand.

Over the past two decades, our field has done a rather credible job in tracking major changes in China's national military strategy and shifts in its operational doctrine. We have explained the rationale behind these changes, have linked these changes to ongoing reforms, and have even identified some of the salient features of PLA operational doctrine. Once again, Paul Godwin has been in the vanguard, as has Harlan Jencks²⁷³ and many others among this group. My own chapter last year touched on the issue very briefly, and I must say, far too superficially. In the course of the research for that chapter I did find that even

²⁷³See Harlan Jencks, "People's War Under Modern Conditions: Wishful Thinking, National Suicide, or Effective Deterrent," *China Quarterly*, No. 98 (June 1984), pp. 305–319.

some PLA writers seemed astounded at how much their own operational doctrine has in fact changed over the past two decades.²⁷⁴ Some of the more salient changes could be listed as follows:

- From luring deep to fighting forward;
- From a war of annihilation to a campaign against key points;
- From a war of attrition to a decisive campaign with a decisive first battle;
- From waiting for the first blow to deterring the first blow;
- From a defensive campaign to an “offensive defense” campaign;
- From “advance and retreat boldly” to checking the initial enemy advance;
- From a “front army campaign” to a “war zone campaign”;
- From the principle of mass to the principle of concentration of firepower; and
- From four single-service campaigns to joint service campaigns.²⁷⁵

Frankly, however, this level of granularity is not very satisfying, and I have certainly done nothing to fill the gaps. Consequently, it seems to me that as we turn to the future, one of the tasks in our field should be to attempt to do what we can to understand at a much deeper level just what it is that PLA operational doctrine looks like. The closer we can come to answering that question, the better our position to measure the elusive doctrine-capabilities gap.

Concluding Comments: Enabling Doctrine and Developments of Note

In conclusion, I find myself in agreement with the two key bottom lines in Godwin’s chapter. First, that the PLA is “simply not capable of conducting the kind of war their doctrine envisions; a short, high-intensity conflict fought for limited political objectives within a confined theater of operations.” And second, to paraphrase, that PLA doctrine *continues* (my word) to be the driving force behind its transformation.

²⁷⁴For example, see “Major General Gao Guozhen and Senior Colonel Ye Zhen View Operational Doctrine Since the 1980s,” in *Zhongguo Junshi Kexue*, 20 November 1996 (as carried by FBIS).

²⁷⁵See David Finkelstein, “China’s National Military Strategy,” in James C. Mulveron and Andrew N.D. Yang, eds., *The People’s Liberation Army in the Information Age*, Santa Monica, CA: RAND, CF-145-CAPP/AF, 1999.

I would, however, caveat the first judgment with the word “currently” and I do not think Godwin would object to that. It seems clear to me that the PLA understands full well its shortcomings. And it also seems to me that we are finally seeing serious attempts to rectify those shortcomings. This is especially true in the area of “software” reform that was the focus of the 1998 CAPS-RAND conference. And I would hope many would agree with me when I posit that we may well be on the cusp of the PLA finally making the right moves to position itself to enable its doctrine sometime in the not-too-distant future.

Since last we gathered (July 1998) there have been several significant developments in PLA reform that bear further scrutiny.

- First and perhaps *most significant* are the combat regulations that have been promulgated. It is clear that the so-called combat ordinances, first mentioned publicly in February 1999 and highlighted again in June 1999, are a codification of operational doctrine for joint operations. If we hope to understand PLA operational doctrine it is imperative we study as best we can this major development, for it may be the “driver” of all other reforms (see accompanying figure as one way to think about doctrine-reform connectivity).²⁷⁶
- Second, a significant PLA force-restructuring experiment may soon begin. A decision has apparently been made by the CMC to consider the restructuring of the ground forces to make brigades the basic combat formation. Initial information suggests that regiments will be abolished, divisions may even be abolished, and the structural system being considered is one that goes from company to battalion to brigade directly to Group Army Headquarters. Tentative information suggests that in the course of the year 2000 each military region will be required to choose one group army with which to test the new system. While the data to back up this development are still sparse it makes perfect sense. Time will tell.²⁷⁷
- Third, as we are all aware, the PLA has made the decision to enact a significant restructuring of its entire professional military education

²⁷⁶Ren Xiangdong, “PLA Ground, Naval, and Air Units Implement New-Generation Combat Regulations,” *Liaowang*, No. 23, 7 June 1999 (FBIS); Chang Huang, “To Fight a Modern Local War, the PLA Joint Services Put New Operating Regulations Into Effect,” *Kuang Chiao Ching*, 16 May 1999, No. 320, pp. 46–47 (FBIS); and “Earnestly Implement Operation Decrees and Continue to Enhance Capacity to Win Wars,” interview with Fu Quanyou, *Jiefangjun Bao*, 25 February 1999, p. 1 (FBIS).

²⁷⁷Interviews with senior PLA officers.

establishment and is increasingly commissioning officers from civilian universities.²⁷⁸

- Fourth, logistics at the military region level are currently undergoing a restructuring and reconsolidation in order to better support joint warfighting.²⁷⁹
- Fifth, in June 1999 *Xinhua* reported that Jiang Zemin recently signed “regulations on the management of the organizational establishment of the Chinese People’s Liberation Army.” Reading this one article indicates that for the first time since its founding there may now be in the PLA the rough equivalent of a formal and regular Table of Organization of Equipment (TOE) and Table of Distribution and Allowances (TDA). In other words, all PLA units and organizations will have their size, organization, personnel, and equipment allocations set and accounted for. Beside the obvious benefits that accrue in the course of downsizing personnel and proper fiscal management of units, this regulation will be critical in assisting a major force restructuring (and task organizing for combat) should the aforementioned experiments with brigades come to pass. I see this as a potentially significant reform in streamlining the PLA and enhancing its combat effectiveness.²⁸⁰
- Sixth, it is clear that the PLA continues to place emphasis on upgrading the nature of large and small unit training and that the emphasis is going to be on using more high-tech simulators and more joint force scenarios.²⁸¹

As ever, the murky lens through which we are forced to view the PLA will make tracking progress in these reforms (or even verifying them) very, very difficult. There is no question that when it comes to the doctrine-capabilities gap the glass is currently three-quarters empty. But after many years of thinking about what the PLA *cannot* do, I find myself thinking more and more about what the PLA *might one day be able to do*. I believe they are on the right track and the biggest potential impediment to achieving PLA goals remains, as ever, the PLA.

²⁷⁸ *Xinhua*, “PRC Establishes New Military Schools Per Jiang Decree,” 2 July 1999 (FBIS); and *Xinhua*, “PLA Information Engineering University Set Up,” 2 July 1999 (FBIS).

²⁷⁹ Interview with senior PLA officers; and Pei Fang, “Major Operation to be Performed on Military Logistical System,” *Kuang Chiao Ching*, No. 318, 16 March 1999, pp. 50–52 (FBIS).

²⁸⁰ *Xinhua*, “Jiang Signs Order on Military Establishment Regulations,” 24 June 1999 (FBIS).

²⁸¹ Ma Xiaochun, “PLA Plan Military Training Tasks for 1999,” *Xinhua*, 6 January 1999 (FBIS); and Zheng Shouzeng, “Attain Cross-Century Development in Campaign Training—A Theoretical Review of Our Army’s Campaign Training Over 20 Years,” *Jiefangjun Bao*, 22 December 1998 (FBIS).

6. Transformation and Refinement of Chinese Military Doctrine: Reflection and Critique on the PLA's View

*By Dr. Alexander Chieh-cheng Huang*²⁸²

The concepts of "people's war" (or military doctrine) and "active defense" (military strategy) are two fundamental components of Mao Zedong's military thought. "Military doctrine" (*junshi zhidao sixiang/zhunze*) provides both the political vision on the nature of warfare and military guidance for the armed forces to follow. Because military doctrine must adapt to reflect changes in the strategic and political environment, it is not surprising that the doctrine of people's war (*renmin zhanzheng*) has undergone substantial revision in the last 20 years and that these changes have mirrored changes in China's security environment and national priorities.

However, despite these changes in the doctrine of people's war, a decade-long debate still rages within the PLA over whether this doctrine, changes and all, is, in fact, obsolete. On the one hand, some officers argue that advances in military technology and the RMA have rendered Mao's concepts untenable. However, official publications and statements by the PLA and related institutions maintain that the concept of people's war remains a key feature of modern warfare.

Accordingly, this chapter addresses two fundamental questions: (1) Is the doctrine of people's war truly obsolete, despite Deng Xiaoping's modifications to adapt it to "modern conditions"? and (2) How does Deng's concept of "people's war under modern conditions" differ from Jiang Zemin's emphasis on high technology? To highlight both the changes and continuities in Chinese military doctrine and to evaluate various official interpretations, this chapter relies on a close textual reading and critical examination of the PLA's own views on the evolution of people's war as expressed in official publications and personal interviews. Through this effort, the author hopes to contribute to a more complete understanding of the PLA's doctrinal transformation in the past 20 years which might serve as a guide to future doctrinal developments.

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The Concept of People's War: A Status Report

In Chinese military publications, the term “people’s war” embodied several different concepts, including military thought (*junshi sixiang*), military strategic thought (*junshi zhanlue sixiang*), military theory (*junshi lilun*), military school of thought (*junshi xueshuo*), military doctrine (*junshi zhidao sixiang/junshi zhunze*), and operational forms (*zhuozhan xingshi*).

Similarly, in the West the term “people’s war” had multiple meanings, depending on the context in which it was used. From a political perspective, it described the revolutionary nature of the PLA and the unique relationship between the CCP and the military. When used in the context of military doctrine, “people’s war” referred to a continental defense based on cooperation between regular and irregular military forces (i.e., between the “army” and the “people”). Operationally, people’s war referred to a type of warfare based on mobility, attrition, and other guerrilla-type tactics.

Irrespective of which definition of people’s war is used, the real question remains: Is “modernized” people’s war (*xiandaihua renmin zhanzheng*) still a traditional Maoist type of people’s war? According to the original definition of people’s war as “war conducted by a suppressed class or nation (*minzhu*) through mass mobilization in order to liberate itself,” the term is outdated and no longer relevant to China’s current security challenges. However, alternative definitions of people’s war put forth by various PLA analysts and researchers offer a more fruitful avenue for discussion and analysis. The following section presents a collection of views based on the author’s interviews with PLA officers in Beijing and Washington, D.C. These views can be classified into the three categories described below.

People’s War Is Obsolete

Proponents of this view point to a statement allegedly made by Deng Xiaoping that the era of war based on “millet and rifles” (*xiaomi jia buqiang*) has passed, meaning that the old forms of people’s war such as sparrow warfare (*maquezhan*), tunnel warfare (*didaozhan*), and other forms of guerrilla warfare are no longer effective because of advances in military technology. Therefore, the doctrine of people’s war has no relevance to present military and security challenges.

Furthermore, the concept of people’s war is predicated on a war fought within China, which explains Mao’s emphasis on the “three combination” (*sanjiejiehe*) of

regular army units, local army forces, and the people's militia. However, changes in the international environment make conflict on or beyond China's borders increasingly plausible and advances in military technology render reliance on the masses for logistics and other combat support untenable.

Finally, the cost of conducting people's war as envisioned by Mao would be prohibitive, as China would not be able to sustain the resource requirements for maintaining a militarized society for any length of time. Also, deploying relatively untrained and underequipped militia against a technologically advanced adversary would likely be suicidal and could rapidly lead to a political crisis.

People's War Is Forever

Other PLA officers hold a diametrically opposed position—namely that the doctrine of people's war encapsulates timeless principles of warfare that are the product of accumulated PLA warfighting experience. According to adherents of this position, the essence of people's war can be expressed in a famous Chinese idiom, an unending process of “crossing the river by feeling the stones beneath the water.” Because this doctrine is based on China's domestic situation, changing security environment and stage of military development, it remains a source of guidance for Chinese army building.

In addition, the doctrine of people's war embodies ideals of justice, the use of military for only defensive purposes, and unity between the army and the people. Thus, as stated by a retired senior PLA officer, a renunciation of people's war could imply that China will abandon its long-standing defensive military posture, which would cause alarm among China's neighbors.

While proponents of people's war recognize that modern warfare relies more on a standing professional army than on the mobilization of the masses, they stress that the role of ordinary people is still important, particularly with respect to computer warfare and passive BMD. Also, they point to the fundamental and indispensable role of public support of the state in any national crisis. Therefore, officers, researchers, and analysts in this camp conclude that while the form of warfare must change in accordance with advances in technology, the core principles of people's war that address the relationship between man and weapons and between the army and the people remain not only valid but essential for guiding the development of the PLA.

People's War Cannot Be Abandoned Yet

A third group occupies the middle ground in this debate by adopting a more pragmatic view that while the doctrine of people's war possesses little utility and relevance in the conduct of modern warfare, the PLA currently lacks the equipment and ability to plausibly engage in such conflicts. Therefore, immediately abandoning the doctrine of people's war while the PLA can only think or talk about high-tech warfare does not represent a prudent option.

Precisely because the debate on the salience of people's war remains unsettled, the current state of PLA doctrine is difficult for outsiders to ascertain, especially as a wider range of opinions is tolerated in official publications. However, it is safe to say that actual changes in doctrine are probably much smaller in degree than suggested by a review of the literature. First, views stated in official publications still represent divergent perspectives that have not matured and gained mainstream acceptance. For example, a number of articles in PLA publications are simply copied from foreign military publications and serve more to inform various PLA constituencies about foreign developments than to serve as authoritative guidance. Also, the transition to a new doctrine must most likely be preceded by the acquisition of appropriate hardware and other resources. While the PLA lacks such equipment in sufficient quantities, there will be little incentive for changing the status quo. Therefore, while it may be obvious to those inside and outside the PLA that the doctrine of people's war is not well suited to warfare under modern conditions, changes in doctrine will only come about slowly.

Observations

As can be seen from the above discussion, the concept of people's war addresses three issues: (1) the political nature of warfare and the unique relationship between the PLA and the CCP, (2) actual guiding principles for the conduct of warfare, and (3) specific operational and tactical guidance for the conduct of military campaigns. Those who claim that people's war is obsolete base their views on changes in China's security environment and advances in military technology. On the other hand, those who argue for the continued relevance of people's war point to the political and organizational aspects of warfare, in particular the relationships between the army and the people and between the army and the Party. As such, the retention of the doctrine of people's war actually implies that it possesses relevance in the political sphere. As such, it will retain relevance so long as China maintains a defensive strategy

(i.e., fighting wars only to protect its own sovereignty) and as long as the Chinese people are mobilized in any manner to support the attainment of military objectives.

Doctrinal Evolution with Chinese Characteristics

Deng Xiaoping's modernization program was animated by two concepts: "liberating thinking" (*jiefang sixiang*) and "seeking truth from facts" (*shishi quishi*). This pragmatic approach, summarized in eight Chinese characters, also serves as a justification for updated interpretations of Chinese military doctrine.

Legitimacy of Change

In the last 20 years, Chinese military leaders transformed their military doctrine to better match a new security environment. However, to maintain ideological continuity they labeled such changes "creative development" (*chuangzao fazhan*) to avoid accusations of apostasy. Thus, in 1985, Deng replaced Mao's tactics of "luring the enemy deep" and "preparing to fight a total war" with "extended depth of defense" and "local war in China's periphery," respectively. However, Deng was also careful to include these drastic changes under the politically acceptable rubric of "people's war under modern conditions," thereby demonstrating an explicit linkage to Mao's revolutionary thinking.

After the Persian Gulf War of 1991, the PLA addressed the issue of high-technology weapons and concepts in the conduct of modern warfare. Following Deng's strategy, Jiang Zemin chose to call these efforts "Deng Xiaoping thought of army-building in the new era" (*Deng Xiaoping xinshiqi jundui jianshe sixiang*) to provide political cover for this divergence from the Maoist line. Note that some observers identify three stages in the evolution of Chinese military thought: Mao's era of "revolutionary doctrine," Deng's era of "modernization doctrine," and Jiang's era of "high tech doctrine." But most Chinese military journals consider the current emphasis on high technology to fall under the Dengist doctrine of modernization.

Initiative (xianfa zhiren)

The doctrine of people's war addresses the question of initiative at two levels, which is consistent with the moral precept of using military force only for national self-defense. Mao wrote that, with respect to strategy, the PLA would

respond only to an enemy's first attack (*houfa zhiren*) but, operationally, the PLA should not hesitate to launch a first strike (*xianfa zhiren*).

However, modern high-tech warfare may compel a preemptive strike if a superior enemy is to be defeated. If so, does this mark a departure from Mao's edict of allowing the enemy to strike first? There is no consensus on this point as some PLA officers state that China's defensive strategy and philosophy of fighting only moral wars means that both active defense and *houfa zhiren* still apply. Interestingly, proponents of this view interpret the 1996 Taiwan crisis as an application of this principle, as the United States is considered to have initiated an attack by allowing Lee Teng-hui to visit, thereby interfering with China's domestic affairs and necessitating a Chinese response consistent with letting the enemy strike first. On the other hand, arguments are put forth that the demands of high-tech warfare mean that Mao's concept of *xianfa zhiren* must also apply at the strategic level to provide adequate freedom of action for the military.

Overcoming the Inferior with the Superior (yilieshengyou)

According to Mao, the key to victory in people's war lies in defeating a superior enemy with backwards equipment by avoiding one's shortcomings and expanding one's strengths. Because China's military capabilities are still weak despite 20 years of defense modernization, many Chinese military researchers have sought to identify ways of fighting a modern high-tech war with inferior equipment. Particular issues of concern in this area include concealing troop movements from an adversary's all-weather reconnaissance capabilities and engaging in night fighting without night vision equipment. More important, many military journal articles propose exploitation of enemy weaknesses and developing "magic weapons" (*shashoujian*) to inflict surprise attacks that overcome inherent weaknesses in the PLA. To many PLA officers, this demonstrates the continued relevance of the concept of "overcoming the inferior with the superior."

Three Basic Forms of Warfare

Mao described three types of warfare that could be used to oppose a superior enemy: (1) mobile warfare (*yundong zhan*), (2) positional warfare (*zhendi zhan*), and (3) guerrilla warfare (*youji zhan*). Each of these forms of warfare also includes related "magic" weapons (*fabao*). The PLA believes that each of these forms of warfare can be improved on and applied to modern high-tech warfare.

In mobile warfare, modern technology permits much faster troop movements that call for the establishment of fist units (*quantou budui*), RRUs (*kuaisu fanying budui*), and rapid logistic units (*kuaisu baozhang budui*). In positional warfare, the PLA abstracted the Maoist prescription for “leaner defense” (*xianshi fangyu*) by digging tunnels and hardening shelters on the battlefield to the more general proposition of “resolutely defending” (*jianshou fangyu*) “key points” (*yaodianqun*). Accordingly, strengthening air defenses and improving the survivability of China’s C3I nodes and prosperous coastal cities have become a top priority. Even guerrilla warfare has a role to play in high-tech warfare, if adapted to modern circumstances. For example, Mao believed that guerrillas could play an important role in support of regular army operations while Deng called for the provision of local militia with anti-tank missiles. However, the PLA expects that guerrilla warfare under high-tech conditions will rely on professional soldiers and not on the militia or the masses. For example, specialized electronic jamming units and air assault teams are necessary for the successful prosecution of future warfare.

Mobilization of the Masses

For Mao, mobilization of the masses was the key to the formation of a united front that could carry out the communist revolution to a successful conclusion. Today, however, China’s security must depend on a professional standing army able to fight and win wars under high-tech conditions. Nevertheless, PLA strategists believe that China’s landmass and population can still serve as a useful deterrent. For while high-tech warfare may take place on China’s borders and in its territorial waters, an enemy must still invade the mainland if a decisive victory is to be gained. In Mao’s day, this deterrent was encapsulated in the phrase “three combinations” (i.e., the regular army or *zhengguijun*, guerrillas or *youjidui*, and the militia or *minbing*). Under modern conditions, China could still draw an enemy into a sea of people composed of the People’s Liberation Army, the People’s Armed Police, and the reserve forces—an updated version of the three combinations.

While these revisions represent genuine changes in Chinese military doctrine, it should not be overlooked that many PLA officers regard these developments merely as a continuation and perfection of existing doctrine. For example, one military analyst notes:

We must exploit new means of war (*zhanfa*) to win people’s war under modern conditions, but general principles will remain the same. On the overall guiding thought (*zong de zhidao sixiang*), we still insist on striking key points within a general operations

framework, and emphasizing the power of people's war. On the guidance of operations, we still emphasize the annihilation of the enemy by a concentration of force and local superiority. On the form of operations, we still practice interior defense and exterior line offense, as well as positional and guerrilla operations. On tactics, we still need to uphold our specialty of close war fighting under night cover. As long as we can initiate new ideas based on traditional principles and crystallize them to meet the requirements of modern warfare, we will be able to gain victory in future people's war.

Jiang Zemin's Doctrinal Refinement

In the past 20 years, China has adjusted its military policies in accordance with its perceptions of the international strategic balance and its domestic politico-economic environment. For example, the Enlarged Meeting of the Party Central Military Commission in 1985 marked a dramatic shift in China's threat perceptions, as the resulting "strategic transformation" (*zhanlue yi zhuan* or *zhanlue zhuanbian*) demonstrated. Subsequently, Chinese military doctrine continued to develop as PLA thinkers and planners grappled with the theoretical question of how future warfare will be conducted under "modern conditions."

The performance of the United States in the Gulf War illustrated the devastating effectiveness of high-tech weaponry against a less-advanced opponent. Since then, "winning local wars under high-tech conditions" has become a ubiquitous fixture in any discussion on contemporary military affairs in China. However, the widespread usage of this term shorn of the traditional people's war prefix raises the question of whether this formulation represents a deliberate departure by Jiang from Mao's legacy of people's war. It also raises the question of whether Jiang's high-tech doctrine is a departure from Deng's doctrine of people's war under modern conditions. An examination of several key Chinese military concepts places us in a better position to answer these questions.

The Two Armaments (liangge wuzhuang)

This idea calls for imbuing the PLA with two kinds of intangible resources. First, arm the PLA with thought and theory (*sixiang lilun wuzhuang*)—according to Jiang Zemin, the PLA will uphold Deng Xiaoping's theories on army building in the new era as the guiding principle for defense modernization and military development. Second, arm the PLA with high-tech knowledge (*gaokeji zhishi*

wuzhuang)—when Deng initiated his defense modernization program in the early-1980s, he stressed the importance of modern technology and military education. Jiang merely added high technology to Deng's previously articulated reforms.

The Two Fundamental Transformations (liangge genbenxing de zhuangbian)

This concept encapsulates the PLA's assessment that the geographical loci and nature of its most likely missions have changed from the heartland to China's borders and from open-ended full-scale conflicts to those limited in terms of objectives, space, time, and means. As such, the first "transformation" states that "the base point of preparation for military struggle in the new era, is to shift from conventional (local) warfare under ordinary conditions to winning local war under modern technology, especially high-technology conditions."

It is important to note that the concept of local war first arose in the mid-1980s and was not formulated by Jiang Zemin. According to the PLA, local war means warfare with limited objectives and warfare fought with constraints on space, time, and means. However, the PLA should still strive to "consciously control its limited objective, maintain freedom of action within limited space, make best use of limited time, and define limited means by high-technology weapons."

While at least one book published by the PLA states that winning local wars under high-tech conditions is the military strategic guideline of the new era (*xinshiqi junshi zhanlue fangzhen*) and represents a significant step in the development of the active defense strategy, what remains unclear, however, is whether the concept of winning local wars under high-tech conditions should be considered a doctrinal change or an adjustment of military strategy. As such, this question may represent a fruitful area for future research.

Regarding army building in general, the emphasis should shift from quantity to quality and from relying on manpower to utilizing technology. As such, Deng reduced the PLA by one million soldiers while stressing the importance of improving military education and upgrading weapon systems. His view that "science and technology are the top sources of productivity" remains the most quoted phrase by Chinese political and military leaders today. Jiang Zemin's slogans of "building an army with quality" (*zhiliang jianjun*) and "strengthening the army with science and technology" (*keji qiangjun*) can be directly linked to Deng's initial emphasis on the role of science and technology.

The Five Sentences (wujuhua)

According to Jiang the PLA must possess the following five qualities (*xin shiqi jundui jianshe de zongyaoqiu*) in the new era: political qualifications, military competence, good work style, strict discipline, and adequate logistics. These principles are reminiscent of the old tensions between being “red” and “expert.” For while Deng set about transforming the PLA into a modern and professional army and stressed the need for experts, he never contemplated yielding the absolute authority of the Party over the PLA. In Jiang’s five sentences, one finds that three of the five (political qualifications, good work style, and strict discipline) relate to political indoctrination. Thus, we see that the ideal of soldiers who are both red and expert endures.

Conclusion

In the past 20 years, Chinese military doctrine evolved from people’s war to people’s war under modern conditions, which began with Deng’s defense modernization and marked a sharp divergence from traditional Maoist doctrine. The Gulf War served only to further illustrate the need for the PLA to transform itself from a large but backwards army to a smaller, more competent, and technologically sophisticated one. Jiang’s emphasis on high technology should be seen as a refinement to Deng’s doctrine and not as a departure from it. Therefore, if we consider Mao’s doctrine of people’s war to be “old wine in old bottles” and Deng’s real departure from Maoist orthodoxy suitably camouflaged as “new wine in old bottles,” then Jiang’s refinement can be called “new wine in new bottles with an old label.”

Chinese political leaders and military researchers may find it convenient to constantly inject new concepts into existing military doctrine by appealing to the political liturgy of Mao and Deng. However, in the past 20 years, the gap between doctrinal innovation and actual military capability has significantly widened. The PLA under Mao was an army in which “what you saw was what you got.” But now when Chinese leaders speak of winning local wars under high-tech conditions by engaging in five-dimensional warfare and launching surgical strikes against an enemy’s C3I nodes, the PLA becomes an army in which “what you think is what you cannot do.” One PLA officer described this phenomenon by citing two Chinese maxims:

- Great ambition exists when the objective is unclear (*mubiao buming zhixiangda*).
- Plentiful ideas surface when the initiative is undetermined (*xinli meishu dianziduo*).

It seems that this debate within the PLA will continue well into the next century.

7. Chinese Military-Technical Development: The Record for Western Assessments, 1979–1999

*By Dr. Bates Gill*²⁸³

Introduction

Given the recent upsurge in concern over Chinese military power—“asymmetrical” warfighting doctrine, missile buildups, high-tech espionage, and views of future warfare—it is timely to review the record of analysis in the West as to China’s military-technical development since 1979 and gauge whether we have been using the right tools in our work. In particular, we should ask:

- How has the literature evolved, and what explains shifts in research emphasis?
- What “constants”—themes, patterns of debate, frequently repeated inaccuracies, half-truths, and prescient predictions—can be identified?
- What lessons can be drawn from this work and where should future research focus?

In conducting this work, three points help define its approach. First, the work here focuses largely on the scholarship of U.S. specialists. This is because Americans have conducted by far the bulk of Western scholarship on this subject, though Europeans, Israelis, and Australians have also been prominent contributors to the literature. This makes the research more readily accessible, though for better or for worse, the focus of these analyses tends to dwell on U.S. concerns and points of view.

Second, this assessment delves mostly into the major works on the topic, here defined as significant conference papers, chapters in edited volumes, articles appearing in scholarly journals, research monographs, and books. In some

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cases, particularly important articles appearing in business and trade publications—such as in the *Far Eastern Economic Review* or *China Business Review*—are assessed as part of “the literature.” While it is true that the steady stream of articles and newsclips appearing in such magazines as *Asia Pacific Defense Reporter*, *Aviation Week & Space Technology*, and *Jane’s Defense Weekly* often provide the raw data on which larger analyses are built, it is not possible in this brief chapter to conduct a comprehensive literature review of these items, which easily number in the thousands.

Third, the term “military-technical development” is understood to mean contributions to Chinese conventional military capabilities through the indigenous and/or foreign acquisition of militarily-relevant technologies, systems, and hardware—from “muskets to missiles,” to borrow a term from Harlan Jencks.

With these caveats in mind, the chapter proceeds in three principal sections. First, it reviews the literature on the topic from 1979 to 1999 by discerning its principal “phases.” This section traces the evolution and basic nature of each phase and seeks to explain transitions from one phase to the next. Second, the paper assesses the literature by considering its principal themes, debates, inaccuracies, and prescient predictions. Finally, the concluding section draws lessons from this assessment by considering sources and methods, suggesting where analysts got it right and why, where improvements in understanding are needed, and where future research should be headed.

Literature Review: Three Phases

It is not surprising that the evolution of Western analysis on Chinese military-technical development broadly parallels the themes and concerns of China’s security relationship with the West overall. That is, those issues of greatest interest in the security realm tended to be reflected in the literature on Chinese military modernization. Broadly speaking, over the past 20 years, we can identify three principal phases in the literature which follow this pattern. From the late-1970s to the late-1980s—a time of rapid opening between the West and China in the field of military-technical development—the literature dwells largely on the meaning of improved relations with China, especially in the context of the bipolar Cold War rivalry, and how military-related transfers from the West fit into that trend. A second phase, roughly from the late-1980s to the mid-1990s and falling in the period of post-Tiananmen estrangement between the West and China, considered less the military-technical relationship between the West and China and delved more into the domestic context of

Chinese defense capacities, leveraging new sources of information and on-the-ground access. The third and most recent phase, roughly from the mid- to late-1990s, takes a more critical view of China as it emerged from its post-1989 isolation, considering its burgeoning economic base, rapidly expanding access to foreign military and dual-use technologies, and the implications of these developments for U.S. and regional security interests.

Breaking the literature analysis into three phases may be somewhat arbitrary, especially because the periods tend to overlap and work conducted in previous periods often remains relevant to and supportive of subsequent research. Even so, dividing the literature in this way not only flows naturally from the work in question, but also more clearly illustrates both the changes and consistencies in research of this topic over time. In addition—and an important point—we see how the research tends to follow broader concerns in the relationship between the West and China.

Burgeoning Interest, Late-1970s to Late-1980s

Beginning in the late-1970s and peaking in the mid-1980s, interest in China's defense-industrial capability blossomed with the advent of closer, normalized ties between China and the West. In many ways, this period marks a high point in terms of academic interest in and proliferation of studies on this topic. Virtually every major specialist of Chinese security issues took a crack at questions of military-industrial development during this period, and many new scholars first "cut their teeth" on topics related to Chinese arms and technology procurement in the late-1970s and early-1980s. Concerned largely with the potential military problems posed by a reform-minded, modernizing China and the nature of the West's military-technical relationship with Beijing, these works laid the groundwork for many subsequent studies in the 1980s and 1990s.

Prior to this period, little in the open literature existed about China's defense-industrial capacity save for periodic CIA studies on the *Allocation of Resources in the Soviet Union and China* and some limited information about production output and order of battle.²⁸⁴ Studies about the Chinese military prior to this period focused primarily on civil-military relations and the politics, ideology, and professionalism of the PLA. Important exceptions to this overall trend in the open-source literature that had a bearing on defense industrial issues

²⁸⁴For more information see Ray Bonds, ed., *The Chinese War Machine* (New York Crescent Books, 1979) and various *Jane's* publications (1976).

included the studies by Cheng (1970), Heymann (1975), and Walrath (1977), with only the latter addressing the topic directly.

However, beginning in the late-1970s came a flood of works addressing Chinese military-industrial production and procurement. Many of these studies appeared in five leading edited volumes of the period.²⁸⁵ Generally speaking, with some overlap, these studies revolved around two issues. First, a number of studies focused on China's defense industrial capacity and reform.²⁸⁶ Another set of studies zeroed in on questions of U.S. and Western military technology exports to China.²⁸⁷ In addition, during this period three important studies appeared which provided critical historical perspectives to illustrate the long-standing difficulties China had in assimilating foreign technologies for its defense industrial development²⁸⁸

²⁸⁵Paul H. B. Godwin, ed., *The Chinese Defense Establishment: Continuity and Change in the 1980s* (Boulder: Westview Press, 1983); Gerald Segal and William T. Tow, eds., *Chinese Defense Policy* (Urbana: University of Illinois Press, 1984); U. Alexis Johnson, George R. Packard, and Alfred D. Wilhelm, Jr., eds., *China Policy for the Next Decade* (Boston: Oelschlager, Gunn & Hain, Publishers, 1984); Charles D. Lovejoy, Jr., and Bruce W. Watson, eds., *Chinese Military Reforms: International and Domestic Implications* (Boulder: Westview Press, 1986); and Larry M. Wortzel, ed., *China's Military Modernization* (New York: Greenwood Press, 1988).

²⁸⁶See Harry G. Gelber, *Technology, Defense, and External Relations in China, 1975-1978* (Boulder: Westview Press, 1979); Harlan Jencks, *From Muskets to Missiles: Politics and Professionalism in the Chinese Army, 1945-1981* (Boulder: Westview Press, 1982); Sydney James, "Military Industry," in Gerald Segal and William Tow, eds., *Chinese Defense Policy* (Urbana: University of Illinois Press, 1984); Richard J. Latham, "People's Republic of China: The Restructuring of Defense Industrial Policies," in James E. Katz, ed., *Arms Production in Developing Countries* (Lexington: Lexington Books, 1984); John Frankenstein, "Chinese Weapons Development: Process, Progress, Program?" in Charles D. Lovejoy, Jr. and Bruce W. Watson, eds., *Chinese Military Reforms: International and Domestic Implications* (Boulder: Westview Press, 1986); Richard Latham, "Implications of the post-Mao Reforms on the Chinese Defense Industries," in Charles D. Lovejoy, Jr. and Bruce W. Watson, eds., *Chinese Military Reforms: International and Domestic Implications* (Boulder: Westview Press, 1986); Chong K. Yoon, "Problems of Modernizing the PLA: Domestic Constraints," in Larry M. Wortzel, ed., *China's Military Modernization* (Westport: Greenwood Press, 1988); Wendy Frieman, "China's Military R&D System: Reform and Reorientation," in Denis Fred Simon and Merle Goldman, eds., *Science and Technology in Post-Mao China* (Cambridge: Harvard University Press, 1989); Richard Latham, "China's defense industrial policy," in Richard H. Yang, ed., *SCPS PLA Yearbook, 1988/89* (Kaohsiung: Sun Yat-sen University, 1989).

²⁸⁷See David Shambaugh, "Military Modernization and the Politics of Technology Transfer," *Contemporary China* (Fall 1979); Karen Berney, "Dual-Use Technology Sales," *China Business Review* (July/August 1980); David L. Shambaugh, "China's Defense Industries: Indigenous and Foreign Procurement," in Paul H.B. Godwin, ed., *The Chinese Defense Establishment: Continuity and Change in the 1980s* (Boulder: Westview Press, 1983); Douglas T. Stuart and William T. Tow, "Arm Sales," in U. Alexis Johnson, George R. Packard, and Alfred D. Wilhelm, Jr., eds., *China Policy for the Next Decade* (Boston: Oelschlager, Gunn & Hain, Publishers, 1984); Leonard Sullivan, Jr., et al., "Trade and Technology Transfers," in U. Alexis Johnson, George R. Packard, and Alfred D. Wilhelm, Jr., eds., *China Policy for the Next Decade* (Boston: Oelschlager, Gunn & Hain, Publishers, 1984); William T. Tow, "Arm Sales to China," in Gerald Segal and William Tow, eds., *Chinese Defense Policy* (University of Illinois Press, Urbana and Chicago, 1984). Richard Gillespie, "Marketing to the PLA," *The China Business Review* (July/August 1984); Wendy Frieman, "Foreign Technology and Chinese Modernization," in Charles D. Lovejoy, Jr. and Bruce W. Watson, eds., *Chinese Military Reforms: International and Domestic Implications* (Boulder: Westview Press, 1986); Martin L. Lasater, *Arming the Dragon: How Much U.S. Military Aid to China?* The Heritage Lecture Series (Washington D.C.: Heritage Foundation, March 1986); Larry M. Wortzel, *China's Military Potential* (Carlisle Barracks: Strategic Studies Institute, U.S. Army War College, October 1998).

²⁸⁸See Thomas L. Kennedy, *The Arms of Kiangnan: Modernization in the Chinese Ordnance Industry, 1860-1895* (Boulder: Westview Press, 1978); Anthony B. Chan, *Arming the Chinese: The*

Domestic Context, Late-1980s to Mid-1990s

This period was characterized by new sources and on-the-ground access, which served to expand our understanding of the domestic context within which Chinese military-technical development takes place. Several important types of analysis characterize the work on domestic issues during this period. First were those that focused on certain weapon types: atomic weapons,²⁸⁹ ballistic missile development,²⁹⁰ submarine development,²⁹¹ and air power.²⁹² A second prominent set of analyses during the period, focusing principally on the domestic environment, were those addressing the problems and prospects of Chinese defense conversion.²⁹³

Also during this period came the work on the dynamics of organizational and bureaucratic politics in the defense production sector²⁹⁴ and on the broad domestic challenges facing the Chinese defense industrial base going into the twenty-first century.²⁹⁵ A critical precursor to these works, and an important source to this day, was important research on the *san xian*, or Third Line, which laid bare the infrastructural obstacles of China's far-flung defense production system.²⁹⁶ Work begun in this period of access on domestic developments related to China's defense industrial base shed new light on the arms procurement decision-making process.²⁹⁷

Western Armaments Trade in Warlord China, 1920-1928 (Vancouver: University of British Columbia Press, 1982); John Frankenstein, "Back to the Future: A Historical Perspective on Chinese Military Modernization," presented at the International Studies Association annual meeting, Anaheim, California, March, 1986.

²⁸⁹See John Wilson Lewis and Xue Litai, *China Builds the Bomb* (Stanford: Stanford University Press, 1988).

²⁹⁰See John W. Lewis and Hue Di, "China's Ballistic Missile Programs: Technologies, Strategies and Goals," *International Security*, vol. 17, No. 2 (Fall 1992).

²⁹¹See John W. Lewis and Xue Litai, *China's Strategic Seapower* (Stanford University Press, 1988).

²⁹²See Kenneth W. Allen, Glenn Krumel, and Jonathan D. Pollack, *China's Air Force Enters the 21st Century* (Santa Monica: RAND, 1995).

²⁹³See Paul Humes Folta, *From Swords to Ploughshares? Defense Industry Reform in the PRC* (Boulder: Westview Press, 1992); Mel Gurtov, "Swords in market shares: China's conversion of military industry to civilian production," *China Quarterly*, No. 134 (June 1993); J.C. Berthelemy and Saadet Deger, *Conversion of Military Industries to Civilian Production in China* (Paris: Organization for Economic Cooperation and Development [OECD], June 1995); Joern Broemmelhoerster and John Frankenstein, eds., *Mixed Motives, Uncertain Outcomes: Defense Industry Conversion in China* (Boulder: Lynne Rienner, 1996).

²⁹⁴See Benjamin A. Ostrov, *Conquering Resources: The Growth and Decline of the PLA's Science and Technology Commission for National Defense* (Armonk: M.E. Sharpe, 1991).

²⁹⁵See John Frankenstein and Bates Gill, "Current and Future Challenges Facing Chinese Defense Industries," no. 146 (June 1996).

²⁹⁶See Barry Naughton, "The Third Front: defense industrialization in the Chinese interior," *China Quarterly*, no. 115 (September 1988).

²⁹⁷(China Workshop Group, 1998).

Most striking about much of this work is its reliance on new, Chinese-language primary sources for research, and often on-the-ground access which enlivened and strengthened the scholarship on Chinese military-technical development. John Lewis and his collaborators revealed "inside" information about the politics, R&D processes, and technologies involved in the development of Chinese atomic weapons, ballistic missiles, and "strategic seapower." China's decision to pursue a policy of defense conversion translated into unprecedented access for a range of foreign businessmen, consultants, journalists, and analysts into factories, R&D facilities, and boardrooms of Chinese defense-related enterprises. In addition, some of the Western analyses during this period were able to take advantage of newly-released materials and official histories on China's defense industries and military services, including some translated into English.²⁹⁸ Perhaps most important, it was during this period that many former defense attachés in China (such as Ken Allen, Dennis Blasko, Eden Woon, and Larry Wortzel) wrote books, conference papers, and other assessments informed by their experiences with and access to the Chinese defense industrial base.

New Concerns, New Cautions, Mid- to Late-1990s

Beginning in the mid-1990s, a third phase in the study of Chinese military-technical development can be identified. This phase roughly paralleled emergent trends in the global economy in general and in U.S.-China relations in particular. As for global trends, one analyst pointed out that the combination of three convergent developments—the post-Cold War downturn in world arms export markets which helped compel Soviet/Russian military sales to China, the increasing salience of militarily-relevant commercial technologies, and the increasingly globalized world economy—together gave China an unprecedented opportunity for military-technical development.²⁹⁹ As for U.S.-China relations, this period—in spite of two summit meetings—marked a significant turn for the worse, with Taiwan President Lee Teng-hui's visit to the United States in May 1995, China's coercive missile diplomacy against Taiwan

²⁹⁸For example, see the several volumes published under the *Dangdai Zhongguo* or *China Today* series, as well as other publishers: *Dangdai Zhongguo de Hangkong Gongye* (Beijing, Dangdai Zhongguo Chubanshe, 1988); *China Defense: Research & Development* (Beijing: China Defense Science & Technology Information Center, 1988); *China Today: Aviation Industry* (Beijing: China Aviation Industry Press, 1989); *Dangdai Zhongguo Haijun* (Beijing, Dangdai Zhongguo Chubanshe, 1989); *Dangdai Zhongguo Kongjun* (Beijing, Dangdai Zhongguo Chubanshe, 1989); *Dangdai Zhongguo de Guofang Keji Shiye* (Beijing, Dangdai Zhongguo Chubanshe, 1992); and *Dangdai Zhongguo de Bingqi Gongye* (Beijing: Dangdai Zhongguo Chubanshe, 1993).

²⁹⁹These were the principal themes of opening remarks by Bates Gill at the CAPS/RAND Conference on Chinese Foreign Arms Acquisitions, Oxford, England, June 1997.

in 1995 and 1996, China's subsequent missile buildup and steady set of weapons agreements with Russia, and the controversial allegations of China's illicit acquisitions of sensitive technologies. In parallel with these developments, analyses of Chinese military-technical capacities were notably more concerned about the implications for U.S. and regional security.³⁰⁰

Among the studies to come out in this period were several analyses of China's arms acquisitions from abroad,³⁰¹ China's approach to advanced technologies and the RMA,³⁰² and discussions of how Chinese arms acquisitions increasingly affected regional security questions, particularly with regard to Taiwan-related contingencies.³⁰³ In addition, far more attention was given to concerns that China was clandestinely acquiring sensitive U.S. technologies through PLA and defense industrial front companies, dual-use technology transfers, or espionage and otherwise illicit means.³⁰⁴

Assessing the Assessments

Given this broad literature review, what kind of themes, debates, evolving research approaches, half-truths, and borne-out predictions can we identify? We can analyze the literature through the two central themes which have defined Western approaches to the study of Chinese military-technical development:

³⁰⁰However, at least one early study in this period advocated the transfer of U.S. defensive military equipment to China. See Thomas L. Wilborn, *Security Cooperation with China: Analysis and a Proposal* (Carlisle Barracks: Strategic Studies Institute, U.S. Army War College, November 1994).

³⁰¹See Bates Gill and Taeho Kim, *China's Arms Acquisitions from Abroad: A Quest for "Superb and Secret Weapons"* (Oxford: Oxford University Press, 1995); Richard D. Fisher, "Foreign Arms Acquisitions and PLA Modernization," presented to the Conference on the People's Liberation Army, Wye Conference Center, Maryland, September 1997.

³⁰²See Bates Gill and Lonnie Henley, *China and the Revolution in Military Affairs* (Carlisle Barracks: Strategic Studies Institute, U.S. Army War College, May 1996); Michael Pillsbury, ed., *Chinese Views of Future Warfare* (Washington D.C.: National Defense University Press, 1997); Mark A. Stokes, *China's Strategic Modernization: Implications for U.S. National Security*, paper prepared for the Project on the New American Century, July 1999; Mark A. Stokes, *China's Strategic Modernization: Implications for U.S. National Security* (United States Air Force Institute for National Security Studies, October 1997).

³⁰³Richard A. Bitzinger and Bates Gill, *Gearing Up for High-Tech Warfare?: Chinese and Taiwanese Defense Modernization and Implications for Military Confrontation Across the Taiwan Strait, 1995-2005* (Washington D.C.: Center for Strategic and Budgetary Assessments, February 1996); Bates Gill, "Chinese Military Hardware and Technology Acquisitions of Concern to Taiwan," in James R. Lilley and Chuck Downs, eds., *Crisis in the Taiwan Strait* (Washington D.C.: National Defense University Press, 1997); Bates Gill, "Chinese Military Modernization and Arms Proliferation in the Asia-Pacific," in Jonathan D. Pollack and Richard H. Yang, eds., *In China's Shadow: Regional Perspectives on Chinese Foreign Policy and Military Development* (Santa Monica: RAND, 1998); Mark A. Stokes, *China's Strategic Modernization: Implications for U.S. National Security*, paper prepared for the Project on the New American Century, July 1999.

³⁰⁴James Mulvenon, *Chinese Military Commerce and U.S. National Security*, (Santa Monica: RAND, 1998; (Select Committee, 1999).

- Persistent obstacles to Chinese defense modernization and the problem of discerning between “acquisitions” and “capabilities”; and
- Western concern with providing military technology to China.

Glass Half-Empty or Half-Full?

Probably the single most consistent theme in the literature of Chinese military-technical development stresses the *problems* that China faces, rather than the accomplishments it has achieved. The analyses of this type tend to focus on “problems of history” and point to China’s traditional struggle between “self-reliance” and “dependence” (embodied in the well-known *tiyong* concept), difficulties with technology absorption, poor innovation, the low priority given to the military as part of the “Four Modernizations,” and a host of other administrative, financial, political, and organizational problems.³⁰⁵ However, while this theme has dominated analyses of the Chinese defense industrial base, more recent research in this field, taking account of broader shifts in the nature of the world economy, of military technology, and in warfare, raises new concerns about increasing Chinese military capabilities.

Perhaps one of the best illustrations of how certain understandings of the Chinese defense industrial base have persisted and remained relevant over time would be to quote from Harry Gelber’s work from 1979. Noting how China was confronted with a rapidly advancing military-technical environment, Gelber notes:

These developments not only implied the appearance of a whole generation of postnuclear strategic systems but involved increasing complexities and major changes in the whole topography of strategic and other military relationships. For the Chinese government, what was at issue was nothing less than the adequacy, even relevance, of its present strategic and conventional methodologies in circumstances a decade hence. Chinese planners would continue to confront the complex and expensive problems of strategic force upgrading under conditions of long lead times, imperfect information about probable opposing systems, the emergence of new political circumstances, and the discovery of new scientific or engineering phenomena.

³⁰⁵A comprehensive expression of this view is John Frankenstein and Bates Gill, “Current and Future Challenges Facing Chinese Defence Industries,” in David Shambaugh and Richard H. Yang, eds., *China’s Military in Transition* (Oxford: Clarendon Press, 1997).

These words, written more than two decades ago, still have a familiar explanatory ring to them today.³⁰⁶

From the late-1970s and into the 1980s and beyond came a steady stream of analyses which in general took a dim view of the ability of the Chinese defense industrial base to improve itself significantly, either through self-reliance, foreign investments, or direct off-the-shelf procurement from abroad. These analyses tended to focus on certain consistent arguments to support their claims: historical or "cultural" tendencies, political interference, resource restraints, technological and organizational hurdles, and the low priority given to military modernization.

Historical Tendencies: To begin with, certain "historical" or even "cultural" tendencies have formed an important part of the foundation for these arguments. For example, Gelber in 1979 notes that "in the realm of technology, questions of external acquisition are secondary to problems of its creation, adaptation, absorption, and dissemination at home. The Chinese attitude to these has been ambivalent, as the Chinese attitude to the definition and achievement of modernity has been ambivalent."³⁰⁷ A few years later, Tow spoke to similar factors in writing that Chinese leaders needed to find the correct balance between "traditional Sinocentric concerns and the strategic requirements for closing the military technology gap with foreign powers" or else risk significant loss of geopolitical influence.³⁰⁸

This theme was given its greatest elaboration by Frankenstein in his 1986 paper entitled "Back to the Future" and a later work in 1993 in which he spelled out the historically persistent problems China has faced in defense industrialization.³⁰⁹ In this work, and drawing on the research of Fairbank, Latham, and others, Frankenstein focuses in particular on how the traditional adherence in China to the *tiyong* construct has applied to restrain Chinese defense industrialization over the past 150 years. Building on Frankenstein and others, Gill and Kim note in 1995: "The *tiyong* concept . . . at the same time both drives and restrains China's efforts to improve its capabilities through foreign

³⁰⁶From Harry G. Gelber, *Technology, Defense, and External Relations in China, 1975-1978* (Boulder: Westview Press, 1979), p. 75.

³⁰⁷Gelber, *Technology, Defense, and External Relations in China*, op. cit., p. 141.

³⁰⁸William T. Tow, "Science and Technology in China's Defense," *Problems of Communism*, Vol. 34 (July/August 1984), p. 15.

³⁰⁹John Frankenstein, "Back to the Future: A Historical Perspective on Chinese Military Modernization," paper presented at the International Studies Association annual meeting, Anaheim, California, March 1986; John Frankenstein, "The People's Republic of China: arms production, industrial strategy, and problems of history" in Herbert Wulf, ed., *Arms Industry Limited* (Oxford: Oxford University Press, 1993).

inputs by seeking to maintain a significant measure of Chinese self-reliance and 'substance,' while gaining what is useful from foreign sources. The concept reflects an ambivalence toward foreign learning and suggests that certain foreign ideas are useful in their practical or technical applications but are not appropriate for the deeper conceptual roots of Chinese thinking or study."³¹⁰ Other "historical" emphases—social, cultural, and economic conditions—were also the focus of a 1996 work which examined the constraints China would face in experiencing a "revolution in military affairs (RMA)."³¹¹ Along a similar vein, many analysts pointed to China's long-standing concern with "self-reliance" as having a braking effect on the country's ability to make significant strides in military-technical development. Not only would its self-reliant posture preclude the necessarily significant foreign inputs required, but China's clear preference for manufacturing technologies and know-how—rather than off-the-shelf purchases—could be off-putting to wary investors interested in keeping their innovations to themselves.³¹²

Political Interference: Early on in the study of the Chinese defense industrial base, it was apparent that the politics of defense industrialization would play an important, and usually detrimental, role in China's military-technical development. This view draws from an understanding of the "red versus expert" debate in communist Chinese developmental theories, Maoist antagonism toward intellectuals and technology, and the calamity of the Cultural Revolution and the Gang of Four's impact on intellectual, scientific, and technological progress in China. Again, Gelber presciently struck an opening note on this problem in 1979:

If the [Chinese] scientific and technical community is to be optimally effective, it will need greater autonomy in such matters as recruitment and even direction of research. But the problems of the general controllability of the intellectual and professional lives of such research and industrial communities may give pause to a leadership that wishes to emphasize either central authority or the importance of correct belief. . . . [A]s China proceeds up the curve of technological development, the trade-offs between social planning and political attitudes on the one hand, and freedom of

³¹⁰Bates Gill and Taeho Kim, *China's Arms Acquisitions from Abroad: A Quest for "Superb and Secret Weapons"* (Oxford: Oxford University Press, 1995), pp. 12–13.

³¹¹Bates Gill and Lonnie Henley, *China and the Revolution in Military Affairs* (Carlisle Barracks: Strategic Studies Institute, U.S. Army War College, May 1996).

³¹²John Frankenstein makes this point in his "Chinese Weapons Development: Process, Progress, Program?" in Charles D. Lovejoy, Jr., and Bruce W. Watson, eds., *Chinese Military Reforms: International and Domestic Implications* (Boulder: Westview Press, 1986), pp. 78–79.

movement for the innovator on the other, could become more and not less difficult.³¹³

In his 1982 study, Jencks lent even greater weight to these themes in providing ample evidence of how politics kept Chinese military-technical development in check. He notes how the organization charged with overseeing China's military-technical development, the National Defense Science and Technology Commission (NDSTC), was plagued by management "probably much more concerned with setting politically dictated priorities than with technical details." He adds that the military-industrial complex in the 1960s and 1970s was overseen by leaders such as Nie Rongzhen, who by "default" emerged victorious in the Cultural Revolution over "reactionary" leaders such as He Long and Luo Ruiqing who advocated greater integration of production and research. The ironic result of this political struggle, according to Jencks, "was the triumph of an institutional setup which favors advanced research rather than 'practical' development." He concludes that "in the long run, the most serious brake on China's economic and industrial development will probably prove to be a self-inflicted one": radical politics, Maoist tendencies, educational setbacks, and the debilitation of scientific achievement.³¹⁴ Others in the mid- to late-1980s, including most prominently Tow (1985) and Latham (1989), highlight the continuing problem of political interference in the development of China's military-technical capabilities.³¹⁵

Likewise, in 1994, Lewis and Xue detail the impact of the Cultural Revolution, personal political ambitions, and "politics and technology in collision" in a "world gone mad" in their study of the Chinese nuclear submarine program. However, they conclude that in spite of political constraints, the nuclear submarine program still managed to move ahead (though in retrospect it should be said not all that successfully) and ultimately "helped define the limits of politics and the nation's objectives even as they catapulted China into the nuclear age."³¹⁶ More recently, Gill in his 1996 study points to persistent "socio-political" factors—especially in the way the Chinese society is organized and how that affects innovation—as constraining China's ability to achieve

³¹³Gelber, *Technology, Defense, and External Relations in China*, op. cit., p. 187.

³¹⁴See his rich and compelling discussion of these issues in Harlan W. Jencks, *From Muskets to Missiles: Politics and Professionalism in the Chinese Army, 1945–1981* (Boulder: Westview Press, 1982), chap. 6 *passim*; quotes are drawn respectively from pp. 203, 204, and 193.

³¹⁵See Tow, "Science and Technology," op. cit., and Richard Latham, "China's Defense Industrial Policy," in Richard H. Yang, ed., *SCPS PLA Yearbook, 1988/89* (Kaohsiung: Sun Yat-sen University, 1989).

³¹⁶John Wilson Lewis and Xue Litai, *China's Strategic Seapower: The Politics of Force Modernization in the Nuclear Age* (Stanford: Stanford University Press, 1994), quotes from pp. 19 and 20.

RMA-like breakthroughs for its defense industrial base.³¹⁷ However, as “ideology” waned and “pragmatism” became the watchword for Chinese modernization writ large, this factor in the study of China’s defense industrialization has played a diminishing role in subsequent analyses, especially in the later 1990s. This trend will likely continue as China’s leadership continues to be dominated by technocrats, and communist ideology becomes less and less appealing.

Even so, relatively recent Chinese analyses still point to the problem of “leftist” tendencies interfering in the modernization of the Chinese defense industrial base. Even as recently as mid-1999, Jiang Zemin, like other Chinese leaders, continues to place emphasis on “ideological and political development” as part of China’s military-technical modernization. In a speech on the topic, Jiang urged that “efforts should be made to arm the [defense science and technology] students with Marxism, Leninism, Mao Zedong Thought, and Deng Xiaoping Theory to help them develop a correct view of the world, of life and of values, and to enhance their sense of mission and responsibility and of devoting themselves to national defence and military development.”³¹⁸

Moreover, “politics” broadly defined have an important impact in several respects. For example, one of the underlying themes in Pillsbury’s *Chinese Views of Future Warfare* is the generational tug-of-war among three principal doctrinal arguments in the PLA: “People’s War,” “local war under high-tech conditions,” and “RMA” schools.³¹⁹ The political infighting amongst these schools—involving the old guard, new leaders, defense industries, service arms, and other vested interests—will in significant measure define the direction and success of China’s future military-technical development. Looking ahead, it will be interesting to consider how the politics of emergent “nationalism,” and its related imperative for “self-reliance” might affect China’s defense modernization.

Resource Restraints: In addition to such “traditional” constraints, analysts of Chinese military-technical development have also pointed to numerous resources restraints—especially in terms of capital and expertise—as having a burdensome effect on China’s military modernization efforts. Gelber illustrates the contradictory problems by noting that in the 1970s the Chinese leadership

³¹⁷Bates Gill and Lonnie Henley, *China and the Revolution in Military Affairs* (Carlisle Barracks: Strategic Studies Institute, U.S. Army War College, 1996).

³¹⁸Jiang Zemin’s speech to PLA institutions of higher learning is described in “Jiang: Use science to construct modern army,” *China Daily*, 28 June 1999.

³¹⁹Michael Pillsbury, ed., *Chinese Views of Future Warfare* (Washington, D.C.: National Defense University Press, 1997).

was "repeatedly forced to accept the twin propositions that investment in infrastructure was a necessary precondition for creating greater military capabilities and that it would not be wise to devote additional resources to the immediate domestic production of equipment which might be soon out date."³²⁰ Jammes finds that "some improvements [in China's defense industrial base] can be expected on a selective basis; overall, however, the Chinese defence industry is likely to remain circumscribed by continued deficiencies in technology, personnel, and resources." ³²¹

Among other problems, expertise was often cited as a primary resource constraint. Jencks, in his groundbreaking study *From Muskets to Missiles*, notes that "the narrow base of technical manpower will be China's most serious and inflexible military and economic constraint." Jammes points to a "rapidly growing shortage of well-trained scientists, engineers, and technicians," but that "growing numbers" of young students will begin to enter the defence industries in a few years." This has probably not been borne out, as the allure of more lucrative opportunities outside the state-owned defense industrial sector and the "brain drain" of Western-educated expertise have likely diminished the pool of available military-oriented talent in China. Wendy Frieman argues in 1993 that "the open door policy has also made a career in non-defense related science more attractive than it might have been in earlier periods . . . the military sector might have some of the best, but no longer has all of the best, of China's scientists." Baark, in his insightful 1997 study on Chinese "innovation networks" and military development, finds that in the militarily-critical software industry, there "has been a constant brain drain both from Chinese institutions to firms and institutions abroad and from state research institutes to the foreign joint ventures and Chinese non-state enterprises in China . . . the new software engineers increasingly seek career opportunities outside the state-owned sector . . . away from the military industries."³²² With continuing problems plaguing Chinese state-owned enterprise reform, with diminishing markets both at home and abroad for Chinese defense production, and with other, private opportunities on the rise, the defense industrial base will likely continue to have recruitment difficulties.

³²⁰Gelber, *Technology, Defense, and External Relations in China*, op. cit., p. 87.

³²¹Sydney Jammes, "Military Industry," in Gerald Segal and William T. Tow, *Chinese Defence Policy* (Urbana: University of Illinois Press, 1984), p. 129.

³²²These quotes respectively drawn from Jencks, *Muskets to Missiles*, op. cit., p. 209; Jammes, "Military Industry," op. cit., p. 122; Wendy Frieman, "China's Defence Industries," *Strategic Digest* (June 1993), p. 865; and Erik Baark, "Military technology and absorptive capacity in China and India: Implications for modernization," in Eric Arnett, ed., *Military Capacity and the Risk of War: China, India, Pakistan, and Iran* (Oxford: Oxford University Press, 1997), p. 103.

Technological and Organizational Hurdles: Thirdly, many researchers on this subject have stressed China's technical and organizational difficulties, especially with regard to technology absorption, assimilation, integration, R&D design and organization, and a "love-hate" relationship between the defense producers on the one hand and the PLA services on the other. A particular problem in this regard is the consistently revisited theme of Chinese tendencies toward "reverse engineering" or "copy production," rather than emphasis on indigenous innovation. For example, Jencks notes the "chronic tendency to refine existing products rather than to come up with new ones." Likewise, Jammes writes that Chinese "military modernization is likely to remain slow and gradual, primarily dependent upon China's progress in lifting the levels of technology in its industrial base and in creating conditions for indigenous scientific and technological development" and that "the most critical shortcomings are in the design of technology and manufacturing know-how." Godwin's 1988 work reaches similar conclusions on this point, saying: "The PRC's obvious weaknesses in both design and production capabilities do not appear to have been overcome in the 20 years since the USSR severed its support for Chinese military development programs." Writing in the mid-1990s, Frankenstein and Gill note numerous "practical" problems, including "scarcity of resources, lack of skilled experts, managers and labour, including the problem of 'brain drain,' poor infrastructure, technology absorption problems, dwindling markets."³²³

One of the most damning criticisms leveled at the Chinese defense industrial base in this regard—by Chinese and Western authors alike—is the absence of a rational procurement system which effectively links threats and doctrine to equipment requirements. Tow's 1985 study questions whether the "Chinese will be able to proceed smoothly from their traditional military approach . . . to a doctrine more in tune with contemporary technological imperatives."³²⁴ Latham in 1989 notes that "little thought was previously given to linking threat and strategy to equipment manufacture."³²⁵ Lewis and Xue, in their 1994 study of China's nuclear submarine program, find that "China's current strategic doctrines are the product, not the cause, of the projects' political-technical evolution. . . . The strategic doctrines did not shape the projects nor provide a

³²³These quotes respectively drawn from Jencks, *Muskets to Missiles*, op. cit., p. 193; Jammes, "Military Industry," op. cit., p. 129; Paul H. B. Godwin, *The Chinese Communist Armed Forces* (Air University Press: Maxwell Air Force Base, 1988), p. 75; and Frankenstein and Gill, "Current Challenges," op. cit., p. 143.

³²⁴Tow, "Science and Technology," op. cit., p. 17.

³²⁵Latham, "China's Defense Industrial Policy," op. cit., p. 86.

coherent context for them.”³²⁶ The 1995 RAND study on *China's Air Force* highlights the “absence of a coordinated R&D process” and “a system committed to vertical integration,” resulting in an R&D process which “has long frittered away budgetary resources along unproductive or highly duplicative paths.”³²⁷ In all of these findings, Western analysts were largely consistent with broader theoretical studies of military R&D efforts in the developing world that highlight problems of poor facilities, organizational “stovepiping,” and the attraction of “pure” research over applied research.³²⁸

Last Place Among the “Four Modernizations”: Finally, analysts have also emphasized the relatively low priority apparently accorded to military modernization, especially in the late-1970s and throughout the 1980s. Nearly all analysts cite the fact that Deng Xiaoping placed military modernization last in the Four Modernizations hierarchy. If the analysts had it wrong here, it might have been in assuming that this placement might be a short-term phenomenon. Jencks, for example, correctly notes that the “absence of heavy industry from [a list of priorities announced in spring 1979; agriculture, light industry, mining, transport and communications, modern science, and technology] leaves little doubt as to the low priority of military industry *in the short term*.” But he also concluded overall that China’s long-range strategy was to place military development after “general economic and industrial development,” a point that has proven correct.³²⁹ Shambaugh in 1983 notes this as the “most important” trend for Chinese military-industrial modernization, finding, correctly as it turns out, that the PLA would “receive little, if any, increase in budget in the 1980s.”³³⁰ More than a decade later, Godwin and Schulz reach similar conclusions, arguing that the logic of the Four Modernizations program recognized the fundamental priority of improvements in scientific, industrial, and technological fields before modernization could be expected in the military.³³¹

³²⁶Lewis and Xue, *China's Strategic Seapower*, op. cit., p. 20.

³²⁷Kenneth W. Allen, Glenn Krumel, and Jonathan D. Pollack, *China's Air Force Enters the 21st Century* (Santa Monica: RAND, 1995), p. 184.

³²⁸On these broader points, see James E. Katz, “Factors Affecting Military Scientific Research in the Third World,” in James E. Katz, ed., *The Implications of Third World Military Industrialization* (Lexington: D. C. Heath, 1986).

³²⁹Both quotes from Jencks, *From Muskets to Missiles*, op. cit., p. 192, emphasis added.

³³⁰David L. Shambaugh, “China’s Defense Industries: Indigenous and Foreign Procurement,” in Paul H. B. Godwin, ed., *The Chinese Defense Establishment: Continuity and Change in the 1980s* (Boulder: Westview Press, 1983), p. 69.

³³¹Paul H. B. Godwin and John J. Schulz, “Arming the Dragon for the 21st Century: China’s Defense Modernization Program,” *Arms Control Today* (December 1993), p. 3.

Interestingly, even as China's economy advanced, "defense conversion" reforms were introduced into China's defense industrial base, and foreign exchange earnings made possible increased foreign purchases, analysts continued to find serious problems in China's military-technical development capacity. In some cases, according to these analysts, these developments actually tended to exacerbate, rather than resolve, persistent obstacles to improved military-technical development. Latham, for example, recognizes early on (1986) the problem China faces in importing foreign weapons on the one hand, versus increasing overcapacity in the defense industries on the other (a problem which "conversion" was in part designed to resolve). Latham presciently notes that Chinese efforts aimed at greater defense industrial "efficiencies" would pose their own set of difficulties, with three issues of particular concern. He foresaw that enterprise managers would likely seek more profitable endeavors under the rubric of conversion and find ways "to delay, defer, or avoid meeting less profitable defense requirements." Latham also assumed "conversion" would lead to diminished funding to defense industrial enterprises and that "rechanneling of some of the defense production capacity to consumer manufacturing may also result in deferred defense acquisitions."³³²

In the 1990s, Folta, Gurtov, and Brömmelhörster and Frankenstein, among others, published studies replete with analysis detailing how defense industry reforms and conversion—a troubled process of "mixed motives" and "uncertain outcomes"—largely failed in its mission to streamline and improve China's military-technical foundations.³³³ By the end of the 1990s, Baark sees the "diversion of resources" away from military R&D and production in the name of commercialization and profitmaking as having the potential to cause a "hollowing out" of Chinese defense R&D and production capabilities, where the military industries are "losing the capabilities that they acquired during the first three decades of development" after 1949.³³⁴

As a result of these numerous, persistent, and well-documented obstacles to Chinese military-technical development, it is no wonder the conclusions analysts reached were largely pessimistic about the system's prospects in the

³³²Richard J. Latham, "Implications of the Post-Mao Reforms on the Chinese Defense Industries," in Charles D. Lovejoy, Jr., and Bruce W. Watson, eds., *Chinese Military Reforms: International and Domestic Implications* (Boulder: Westview Press, 1986), pp. 44–45.

³³³See Paul Humes Folta, *From Swords to Ploughshares? Defense Industry Reform in the PRC* (Boulder: Westview Press, 1992); Mel Gurtov, "Swords into market shares: China's conversion of military industry to civilian production," *China Quarterly*, No. 134 (June 1993); and Joern Brömmelhörster and John Frankenstein, eds., *Mixed Motives, Uncertain Outcomes: Defense Industry Conversion in China* (Boulder: Lynne Rienner, 1996).

³³⁴Baark, "Military technology and absorptive capacity," op. cit., p. 107.

1980s and 1990s. In the late-1970s, Gelber writes that "While [China] might build a more complicated force structure, with a stronger and more sophisticated system of logistic support, there were not signs in 1978 that would lead one to suppose that a substantial, high-technology defense capacity, based on a major domestic R and D and production effort, was likely to appear before the turn of the century" and that "assuming . . . major upheavals do not occur . . . it seems likely that [China's] relative industrial, technical, and military weaknesses will not be substantially eliminated before the end of the century." Jencks' 1982 study finds that "in the near future, there is prospect for only gradual improvement in PLA equipment." Shambaugh finds in the early-1980s that the "qualitative gaps between indigenous output and international state-of-the-art will remain wide for the remainder of the century." Tow concludes mid-decade that key challenges for Chinese military-technical development will remain "resolution of the innate contradiction between assimilating outside knowledge and retaining sovereign control, linking of doctrine with technical capabilities, and the surmounting of internal and external barriers to military-related science and technology (S&T) assimilation." Allen, Krumel, and Pollack find in 1995 that China's military aviation industry had yet to achieve an R&D process characterized by "integration, synthesis, and high-level coordination" which was "adequately funded and effectively led," while Frankenstein and Gill in 1996 conclude that "in a future military and economic environment of accelerating change and conflicting demands, the [Chinese military-industrial complex] will have to deal with a future of difficult demands and choices."³³⁵

Dramatic Changes Afoot? However, more recent literature, especially that of such authors as Pillsbury, Stokes, and to a lesser degree Bitzinger, Gill, Kim, and others would point to a number of factors that question these assessments. Pillsbury and Stokes in particular point to active Chinese intellectual debates and R&D programs in areas of relevance for future high-tech warfare, "asymmetrical capabilities," "magic weapons," and RMA-oriented systems and technologies. Others, such as Wortzel, acknowledge that China is facing serious problems in its defense development effort, but "to compensate, China's military leaders are working to develop the capability to control sea lines of

³³⁵These quotes drawn respectively from Gelber, *Technology, Defense, and External Relations*, op. cit., pp. 193 and 196; Jencks, *Muskets to Missiles*, op. cit., p. 213; Shambaugh, "China's Defense Industries," op. cit., p. 44; Tow, "Science and Technology," op. cit., p. 17; Allen, Krumel, and Pollack, *China's Air Force*, op. cit., p. 185; and Frankenstein and Gill, "Current and Future Challenges," op. cit., p. 163.

communication, project regional force, and deter the United States and other potential adversaries in creative ways without matching forces.”³³⁶

Sometimes explicitly, other times implicitly, these analysts ground their assessments in several key assumptions. Stokes in particular (1999) makes explicit his argument that Chinese concern with a looming Taiwan contingency is acting as a primary “driver” and “planning scenario” which gives a consistency and rationality to Chinese arms R&D and procurement. According to Stokes, this driver demands three operational requirements in terms of military procurement: establishing information dominance, prevention or deterrence of intervention by outside powers such as the United States, and defenses in the form of air and missile defense, expanded sensor networks, and counterspace capabilities.³³⁷

Second, these more recent analyses point to a fundamental and consistent shift in Chinese military doctrine as a key factor in strengthening Chinese military-technical development patterns. These analyses point to evidence of increasing Chinese interest in the requirements of “limited warfare” and the RMA, especially in the wake of Iraq’s swift defeat at the hands of the U.S.-led Desert Storm forces in early-1991. This interest is reflected most prominently by the influence U.S. and Russian writings on the RMA have on the thinking of Chinese military analysts. Pillsbury’s *Chinese Views of Future Warfare* provides ample evidence of an emergent doctrinal school among Chinese military strategists who are gathering information and publishing studies on how new and future technologies might be integrated into the PLA’s force structure and warfighting strategy in the coming century. According to Stokes, this emerging doctrinal interest requires “neutralization of sensors; long range strikes against command and control nodes, air defense sites and airfields; and the denial of an adversaries [sic] ability to track PLA activities [as] the most important core competencies.”³³⁸ Bitzinger and Gill and Gill and Kim recognize that the twin trends of a shifting Chinese doctrine toward “local wars under high-tech conditions” combined with a change in Chinese threat perceptions to encompass its eastern and southeastern periphery (especially Taiwan), together bring an apparently more focused sense to Chinese arms R&D and procurement.³³⁹ Frieman concurs in finding that “the shift in emphasis in

³³⁶Larry M. Wortzel, *China’s Military Potential* (Carlisle Barracks: Strategic Studies Institute, U.S. Army War College, October 1998), quoted from the summary.

³³⁷Mark A. Stokes, *China’s Strategic Modernization: Implications for National Security*, paper prepared for the Project for the New American Century, 1999, p. 2.

³³⁸Idem.

³³⁹See, for example, Gill and Kim, *China’s Arms Acquisitions from Abroad*, op. cit., pp. 112–119.

Chinese military planning from global war to limited war on the periphery, particularly in maritime theaters to China's east, is gradually being reflected in force posture."³⁴⁰

Finally, more recent analyses raise greater concerns about Chinese military-technical development by highlighting China's market-oriented reforms and unprecedented access to foreign technologies. Here analysts note the end of the Cold War and the dismantlement of COCOM, the collapse of the Soviet Union and the opening of its defense industries and experts to China, the rapid globalization of high-technology trade worldwide, and the increased relevance of legitimately-traded commercial technologies for military purposes.³⁴¹ Wendy Frieman points to an "understated revolution" in Chinese science and technology, such that "the underlying disciplines and technologies relevant to information warfare, and to the RMA, are precisely those areas where China as a country appears to have invested heavily and made spectacular progress: computer science and artificial intelligence, electrical engineering, telecommunications, physics, and certain branches of mathematics. [T]he outcome," she writes, "is the emergence in China's civil or commercial sector of a technical infrastructure that could support a future revolution in military affairs."³⁴²

Acquisitions Versus Capabilities, Aspirations Versus Realities: However, in the end, these more recent analyses fall short of conclusively resolving the consistent debate pitting "aspirations" or "acquisitions" versus "capabilities." That is, how well China can translate its stated military-technical aims and ongoing procurement into a more capable military force. This debate naturally follows from a discussion of *what* China has (or wants to have) and *how* it will be able to bring those assets together. Another way of looking at this debate is to determine the relative importance of "quantity" versus "quality." Even from the late-1970s, this has been a consistent theme. However, in recent years, especially in the most recent "third phase" of study on this subject, the question has become all the more pertinent as evidence mounts of increasingly sophisticated Chinese military-technical aspirations and acquisitions. Moreover, as modern warfare increasingly depends not on "quantity" so much

³⁴⁰Wendy Frieman, "Arms procurement in China: poorly understood processes and unclear results," in Eric Arnett, ed., *Military Capacity and the Risk of War: China, India, Pakistan, and Iran* (Oxford: Oxford University Press, 1997), p. 82.

³⁴¹See Stokes, 1999, p. 4; Select Committee, 1999; and Gill, "CAPS/RAND 1997 opening remarks," op. cit.

³⁴²Wendy Frieman, *The Understated Revolution in Chinese Science and Technology: Implications for the PLA in the 21st Century*, presented to the Conference on the People's Liberation Army, Wye Conference Center, Maryland, September 1997.

as “quality,” assessments of Chinese military capability should likewise take “software” into even greater account.

From the earliest stages of study on Chinese military-technical development, analysts have noted a gap between Chinese declarations and Chinese realities, and between quantitative versus qualitative assessments. For example, Gelber offers an illustration of an air force which combined “substantial basic numbers with serious qualitative weaknesses”: “In 1978, China appeared to have well over five thousand combat aircraft. Though this made it the third largest air force in the world, 80 percent of the planes were obsolete MiG-17 and MiG-19 fighter aircraft. The force also included under one hundred locally built MiG-21s. . . .”³⁴³ Twenty years later, while the aircraft types have changed since 1978, the relevant ratios of “obsolete” to relatively advanced aircraft have not changed substantially, even as China’s overall air force numbers have declined. Shambaugh’s 1983 work finds that acquiring foreign systems and designs is not enough, even if the process could be successfully accomplished. Instead, “To really close these qualitative gaps requires far more than funding, training of scientists, building of industrial infrastructure, or manufacturing advanced equipment. It requires innovation.”³⁴⁴ Godwin, in noting the difficulty China has had in integrating a new multirole combat aircraft stressed not the aircraft itself but questions of pilot training, supply, and maintenance systems.³⁴⁵ In a sense, these analysts foresaw later, more intensive debates which sought to distinguish between the “hardware” (arms procurement and order of battle assessments) and the “software” of Chinese military modernization (questions of training, education, logistics, leadership, assimilative capacities, and C3I and other “integrative” force multipliers).³⁴⁶ The more recent work in the mid- to late-1990s of former military attachés in China such as Allen, Blasko, Corbett, Stokes, and Wortzel has made an especially powerful impact in this debate.

This “quantity versus quality” debate takes on increased importance in the late-1990s and has a number of interesting aspects to it. First, increased availability of information, especially in the open realm, makes it far more possible for researchers to describe and analyze data on Chinese aspirations and acquisitions. The work of Pillsbury and Stokes stands out in this regard, drawing as they do from extensive documentation from the Chinese strategic

³⁴³ Gelber, *Technology, Defense, and External Relations*, op. cit., p. 52.

³⁴⁴ Shambaugh, “China’s Defense Industries,” op. cit., p. 79

³⁴⁵ Godwin, *Chinese Communist Armed Forces*, op. cit., p. 112.

³⁴⁶ These “software” questions were the principal themes explored in James C. Mulvenon and Richard H. Yang, eds., *The People’s Liberation Army in the Information Age* (Santa Monica: RAND, 1999).

analysis and defense industrial communities. Second, as warfighting moves into a more advanced technological stage—characterized by RMA-like capabilities such as standoff and precision-strike assets, stealth capabilities, improved target acquisition and reconnaissance, and information warfare—the question of “quality” or sophistication of weaponry becomes increasingly important relative to simple “quantity” of platforms. In this sense, potential concerns about Chinese “software” capabilities—including innovation, R&D design and organization, systems integration, and technical expertise—become even *more* important as variables for analyzing Chinese military capabilities in this more high-tech environment. Unfortunately, some work on Chinese military capabilities continues to stress the mere acquisition (or potential acquisition) of weapons systems as indication enough of Chinese power. While such analyses may provide comprehensive “data dumps,” they provide little analytical context from which to draw relevant policy conclusions.³⁴⁷

Arming the Dragon

A second major and recurrent theme relates to concerns over the West, wittingly or otherwise, providing China with military hardware and technology to improve its military-technical development. In the United States, shortly following the normalization of relations with China, the Carter administration maintained a policy of “evenhandedness” between Moscow and Beijing when it came to technology transfers. But the Soviet invasion of Afghanistan in December 1979 was quickly followed by the announcement during Secretary of State Harold Brown’s visit to China in January 1980 that the United States would allow, on a case-by-case basis, exports to China of dual-use and military support equipment. By June 1980, following the visits of Liu Huaqing and Geng Biao to the United States, the Defense Department issued a statement that U.S. companies were approved to open negotiations with China to export specific military support items.³⁴⁸ In the years following this formalization of policy to allow for such sales to China, the debate in the United States over this issue has

³⁴⁷One prominent case in this regard is the paper by Richard D. Fisher, “Foreign Arms Acquisitions and PLA Modernization,” presented to the Conference on the People’s Liberation Army, Wye Conference Center, Maryland, September 1997. This study lists more than 54 “foreign weapon systems and technologies China has or could acquire in the near future” in a “gallery of known and possible future foreign military acquisitions by China.” But no accompanying analysis seeks to explain such problems as absorption, integration, training, manpower, maintenance, and other critical realities of force modernization.

³⁴⁸Two detailed accounts of this early period for both U.S. and other Western military-related trade with China are Douglas T. Stuart and William T. Tow, “Chinese Military Modernization: The Western Arms Connection,” *China Quarterly*, No. 90 (June 1982); and Karen Berney, “Dual-Use Technology Sales,” *China Business Review* (July/August 1980). See also Banning Garrett, *The “China Card” and Its Origins*, doctoral dissertation, Brandeis University, 1983.

grown more and more clamorous. The Tiananmen crisis of 1989 brought an end to most direct military exports to China from the West. But with the trends of globalized trade, China's integration into the world economy, and the increased military importance of dual-use technologies, the debate over Chinese access to sensitive, militarily-relevant technologies from the West has intensified to new heights by the end of the 1990s.

Supporters and Detractors: During the 1980s, several schools of thought arose regarding U.S. and Western arms and military technology transfers to China. They might be termed the "supporters," the "detractors," and the "skeptics." Two camps make up the "supporters" group. Prominent among supporters were those who saw such transfers as a way to help China modernize its military in the face of Soviet expansion. In a classic Cold War policy orientation, advocates felt the United States could arm China as a means to undermine and counter Moscow. Mann traces this argument to a RAND report prepared by Michael Pillsbury in 1973, an argument made public in the latter's 1975 *Foreign Policy* article.³⁴⁹ Certainly in the mid- to late-1970s, the United States informally but openly supported European military and dual-use sales to China, transactions which resulted most prominently in the British Spey engine transfer to China in 1975 as well as other European dual-use transfers. Recall that by 1979, when the United States and China normalized their relationship, the Soviet Union had invaded Afghanistan, and Vietnam (with Soviet ships in United States-built port facilities) had invaded Cambodia.

Under these international strategic circumstances, and with the notion of a "China threat" to the United States still considered a far-off and unlikely possibility, U.S. military and dual-use trade to China opened formally under Carter and was expanded under the Reagan administration. Presentations by the Reagan administration to Congress as late as 1987 argued that U.S. goals in defense cooperation with China were to "strengthen China's self-defense capabilities"; "expand parallel interest in mutual opposition to Soviet expansion in Asian areas"; "support an independent foreign policy [for China] which is not threatening to our [U.S.] friends and allies in the region"; and "support China's economic modernization program."³⁵⁰ According to some analysts, even if U.S. support for Chinese military modernization would

³⁴⁹James Mann, *About Face: A History of America's Curious Relationship with China, from Nixon to Clinton* (New York: Alfred A. Knopf, 1999), pp. 59–60, referring to Michael Pillsbury, "U.S.-Chinese Military Ties?" *Foreign Policy*, No. 20 (Fall 1975), pp. 50–64.

³⁵⁰*Congressional Presentation for Security Assistance Programs: Fiscal Year 1988* (Washington, D.C.: U.S. Government Printing Office, 1987), pp. 23, 273–274, quoted in Larry M. Wortzel, "United States Export Control Policies and the Modernization of the China's Armed Forces," in Larry M. Wortzel, ed., *China's Military Modernization* (Westport: Greenwood Press, 1988), p. 172.

ultimately founder for financial and technological reasons, it was the "psychological impact" such dealings had on the leadership in Moscow that was important.³⁵¹

A second camp of supporters might be called the "arms export optimists" who may or may not have supported transfers as a matter of Cold War balancing, but also saw the business and technological opportunity offered by such exports. Richard Gillespie offers helpful guidance to would-be arms exporters in 1984, noting that "before too long . . . the Chinese should be ready to talk about what they really want to buy," that "the Chinese will probably buy from the U.S. first . . . provided U.S. companies are willing to help China in areas such as metal working, machine building, electronics, CAD/CAM, armor, trucks, and ordnance. U.S. defensive sales are possible as early as 1985."³⁵² Holland writes, "there is no apparent reason why the Chinese cannot develop, adapt, produce, operate, and maintain weapons and other military equipment of contemporary effectiveness. The trick will be to find the means to economically equip very large, dispersed forces with simple, reliable weapons, that . . . can match the effectiveness of opposing forces. . . . A joint multinational effort might well produce the best results for the Chinese."³⁵³ In general, this business- and technology-oriented approach has been followed by European, Russian, and Israeli suppliers of weapons and equipment to China, even after the June 1989 Tiananmen crisis.

Wendy Frieman tends to be one of the more optimistic analysts regarding development of Chinese defense capabilities through foreign inputs. Arguing that there is little data to answer the tough question of whether or not to provide the Chinese with foreign military technology, Frieman goes on to note that "foreign equipment, material, technology, or advice has been not an incidental, but a critical feature of conventional weapons production in China since 1949."³⁵⁴ Writing in the mid-1980s, she is optimistic that "reforms in the Chinese economy and improvements in the scientific and technical infrastructure . . . are beginning to affect operations in military factories and are

³⁵¹ Stuart and Tow, "The Western Arms Connection," op. cit., pp. 264-65, quoting from Banning Garrett, "Soviet perceptions of China and Sino-American military ties: implications for the strategic balance and arms control," final report prepared for SALT/Arms Control Group, Office of the Secretary of Defense (Atomic Energy), June 1981.

³⁵² Richard E. Gillespie, "Marketing to the PLA," *China Business Review* (July/August 1984), pp. 34-39.

³⁵³ Leonard Sullivan, Jr., et al., "Trade and Technology Transfers," in U. Alexis Johnson, George R. Packard, and Alfred D. Wilhelm, Jr., eds., *China Policy for the Next Decade* (Boston: Oelschlager, Gunn & Hain, Publishers, 1984), p. 312.

³⁵⁴ Wendy Frieman, "Foreign Technology and Chinese Modernization," in Charles D. Lovejoy, Jr., and Bruce W. Watson, eds., *Chinese Military Reforms: International and Domestic Implications* (Boulder: Westview Press, 1986), p. 60.

likely to contribute to a more receptive climate for future transfers.” She also claims—contrary to other studies—that the “problem with the PLA’s inventory appears to have more to do with the date of the designs and of the production equipment than the standard of workmanship” and that “foreign observers have commended the Chinese on the quality of workmanship evident in Chinese-manufactured weapons. . . .”³⁵⁵

She concludes tentatively in her 1986 study that “China will not be caught forever in a technological time trap, always having to copy acquired weapons one step ahead of indigenous capabilities.” She also concludes: “If the policies outlined above are implemented consistently over the next five years [roughly to the end of the 1980s], foreign observers will see a substantial improvement in both China’s ability to assimilate foreign technology and capacity to develop and produce modern weaponry indigenously.” According to the author, this is true because leaders have realistic expectations, the Chinese have re-evaluated their capabilities, and they are on a “two-track” program to import advanced technology and develop a first-rate indigenous military R&D and production capability over the longer term.³⁵⁶ More than ten years later, in the late-1990s, Frieman remains optimistic. In discussing China’s perennial dilemma of deciding between “making or buying” necessary equipment, she writes that largely owing to dual-use transfers, China is in a position to improve its defense production capability gleaned through foreign inputs. She notes that it is “safe to assume that the expertise now being garnered through key programmes such as the transfer of manufacturing technology for civilian airliners is being absorbed, one way or another, by the manufacturers of Chinese military aircraft.” She also finds “forces at work that suggest a trend towards decreased capacity in the military industry base, as well as trends that should ultimately strengthen that base considerably.”³⁵⁷

On the other side of the fence are “detractors” who have a less sanguine and even opposed position on the question of U.S. and Western arms and technology sales to improve Chinese defense capabilities. Analysts in this camp opposed the provision of weapons and military technology largely on strategic grounds. In this context, Sullivan suggests as early as 1984 the possibility for a “limited Sino-Soviet rapprochement,” noting that “. . . there is no firm basis to conclude that China is no longer a ‘potential adversary,’ either by returning to some Soviet-led coalition or by actively contesting vital U.S. interests elsewhere

³⁵⁵Ibid., p. 60.

³⁵⁶Ibid., pp. 65, 67.

³⁵⁷Frieman, “Arms Procurement in China,” *op. cit.*, p. 80.

in the region.”³⁵⁸ In 1986, when it was clear that the United States was going ahead with the “Peace Pearl” avionics upgrade package for China, Lasater argues that American friends in Asia disagreed with the sale, that it adversely affects the Taiwan Straits balance, that it did not do much to deter the Soviet Union, and that China would turn around and integrate the technology into other systems of its own. In conclusion, he asks, “Is a stronger PRC likely to be more cooperative with the United States in Asia, or will it pursue policies increasingly counter to our own interests?”³⁵⁹

Similarly, toward the end of the 1980s, Larry Wortzel focuses on the need to be wary about tech transfer to China. He writes that the United States should “use strategic exports and arms sales as levers to advance the national interest” and “to ensure that we protect ourselves and do not ‘eat’ our own technology.”³⁶⁰ Wortzel warns of Chinese efforts to obtain controlled technologies illegally and cautions that “notwithstanding China’s lack of qualified S&T personnel and the limited but developing ability to absorb new technology, the PRC has clearly demonstrated the capability to focus its S&T efforts successfully in certain areas critical to China’s defense industries.”³⁶¹

The Tiananmen crisis of June 1989 and the cutoff of most Western arms trade to China gave the “detractors” less to be concerned about. Nevertheless, as other suppliers have been identified (such as Israel and Russia), and European producers have incrementally returned to the China defense market, opposing voices are making themselves heard again. Moreover, the question of dual-use and other potentially sensitive technology transfer has also become an issue of greater concern among many analysts and policymakers in the United States.³⁶²

Standing between the “supporters” and the “detractors” were the skeptics who foresaw many of the political, financial, and technological problems likely to obstruct and limit significant U.S. and Western arms sales to China. Some pointed to the tensions between arming China and arming Taiwan at the same

³⁵⁸Sullivan, et al., “Trade and Technology Transfers,” op. cit., p. 313.

³⁵⁹Martin L. Lasater, *Arming the Dragon: How Much U.S. Military Aid to China?* The Heritage Lectures, No. 53 (Washington, D.C.: The Heritage Foundation, 1986), pp. 5–8, quotation from p. 8.

³⁶⁰Larry M. Wortzel, “United States Export Control Policies and the Modernization of the China’s Armed Forces,” in Larry M. Wortzel, ed., *China’s Military Modernization* (Westport: Greenwood Press, 1988), pp. 159 and 160, emphasis in original.

³⁶¹*Ibid.*, p. 170.

³⁶²*Report of the Select Committee on U.S. National Security and Military/Commercial Concerns with the People’s Republic of China* [Cox Committee Report] (Washington, D.C.: U.S. Government Printing Office, May 1999). See also Richard D. Fisher, *How America’s Friends Are Building China’s Military Power*, Roe Backgrounder, No. 1146 (Washington, D.C.: The Heritage Foundation, November 5, 1997).

time and argued that arms sales to China might unduly antagonize the Soviets or noncommunist friends of the United States.³⁶³ Others emphasized the staggeringly prohibitive cost involved in truly modernizing the PLA, estimated by some to range in the hundreds of billions of dollars. Other analysts noted the lack of Chinese absorptive capacity for a large influx of modern technologies and hardware and the Chinese preference for “window shopping” of production technologies over off-the-shelf purchases of finished platforms.

For example, Gelber in the late-1970s recognizes that in spite of efforts to modernize by acquisitions from abroad, “[China’s] ability to modernize the PLA by this route seemed likely to be subject to severe [sic] constraints,” including technical, absorptive, political, and, most important, economic considerations. Writing in the early-1980s, Shambaugh agrees that while possibilities exist for sales, the prospects are narrow owing to problems of history, politics, and limited absorptive and financial capacities, concluding that “only a few weapons deals will be closed in the 1980s.” Jammes in 1984 argues—optimistically, as it turns out—that “even if China were to acquire foreign defence-related technology, the impact on production would not become apparent until the late-1980s.” Sullivan makes the point that “China has a limited ability to assimilate foreign technology and finance its development” and that China must first “solve or improve a host of political, institutional, economic, managerial, and logistic problems.” And, in an analysis that seems to ring as true today as in 1986, Frankenstein contends that it is “premature to declare China as a new market for Western military hardware or technology” and that repeated Chinese references to “self reliance” should bring caution to the minds of would-be suitors.³⁶⁴ Tow summarizes these various views in saying, “The dreams of a massive China arms market, much like nineteenth-century dreams of textile markets, are sorely misplaced. The common cause for the failure of both dreams was to see the question from the point of view of what ‘we can sell’ rather than what China wants to buy.”³⁶⁵ Interestingly, several of these “skeptics” allowed that with additional foreign exchange

³⁶³See William T. Tow, “Arms Sales,” in Gerald Segal and William T. Tow, eds., *Chinese Defence Policy* (Urbana: University of Illinois Press, 1984); and Stuart and Tow, “The Western Arms Connection,” op. cit., pp. 264–266. Shambaugh associates Ray Cline and Cyrus Vance with these positions in his “China’s Defense Industries,” op. cit., fn. 95 and 96.

³⁶⁴These quotes drawn respectively from Gelber, *Technology, Defense and External Relations*, op. cit., pp. 83–85; Shambaugh, “China’s Defense Industries,” op. cit., p. 73; Jammes, “Military Industry,” op. cit., p. 129; Sullivan, “Trade and Technology Transfers,” op. cit., p. 287; and John Frankenstein, “Chinese Weapons Development: Process, Progress, Program?” in Charles D. Lovejoy, Jr., and Bruce W. Watson, eds., *Chinese Military Reforms: International and Domestic Implications* (Boulder: Westview Press, 1986), p. 79.

³⁶⁵Tow, “Arms Sales”, op. cit., p. 159.

earnings, "one might expect increased purchases" of foreign weapons and military technologies by China.³⁶⁶

In the major mid-1990s work on Chinese arms imports, Gill and Kim tended to view with skepticism the possibilities for significant improvements to Chinese military-technical development as a result of foreign inputs. In spite of cooperation with Russia that went largely unforeseen, they point to a range of domestic and international considerations—budgetary, administrative, technical, organizational, and related to China's security perceptions—which would shape its ability to benefit from foreign weapons and militarily-relevant technology acquisitions. They conclude that while China increasingly recognizes the problems it faces in absorbing foreign technologies and Beijing appears to envision a more focused procurement process, broader constraints will continue to limit China's ability to make the best use of the access it enjoys to foreign inputs for its military-technical development.³⁶⁷

Conclusions: Where to Improve and Where to Go From Here

This concluding section draws lessons from the assessment above by considering sources and methods and suggesting where we got it right and why, where improvements in understanding are needed, and where future research should be headed.

Sources and Methods

Sufficient and reliable data on this topic have always been a problem. Even as late as 1988, one of America's leading specialists of the Chinese military had to admit that the Chinese defense industrial system "is not fully understood simply because not all of its components are known, and the relationships between and among the known components are not at all clear."³⁶⁸ That statement holds true today as well, and in some ways the situation has become more complex with COSTIND/GAD reforms, commercialization and "conversion," and increasingly interwoven foreign relationships within the PLA

³⁶⁶See Shambaugh, "China's Defense Industries," op. cit., p. 70; and Frankenstein, "Chinese Weapons Development," op. cit., pp. 77–78. Frieman also writes that "it is at least possible, if not likely, that modest purchases, targeted at specific weaknesses, will continue as China's foreign exchange earnings grow." See her "Foreign Technology," op. cit., p. 62.

³⁶⁷Gill and Kim, *China's Arms Acquisitions from Abroad*, op. cit.

³⁶⁸Paul H. B. Godwin, *The Chinese Communist Armed Forces* (Maxwell Air Force Base: Air University Press, June 1988), p. 75.

and defense industry-related production sector. Typically, far more is known about Chinese military-technical "output" than input and this remains the case today. Hence the work of the trade press is carefully perused and quantitative reports and databases, such as those compiled by SIPRI, are assembled.

However, overall, the quantity and quality of information in the open realm have dramatically grown with increased access by businessmen, analysts, journalists, and attachés to Chinese scientists, analysts, defense factories, and R&D units. More open source Chinese literature is available today compared to the past, including such publications as the *Chinese Aeronautics and Missilery Abstracts* (CAMA) and other, similar bibliographic reference materials on militarily-relevant R&D. Deteriorating relations between the United States and China may signal less, not more, access at the firm level.

Miscues

Sino-Russian Rapprochement: Most analysts at first did not foresee the Sino-Russian rapprochement and subsequent arms trade relationship, and have since tended to downplay its likely extent and success. Tow writes in 1984: "Historical experience will most likely temper most Chinese hopes for obtaining arms sales as part of the recent Sino-Soviet negotiations. It remains highly improbable that the Soviets would either offer or that the Chinese would accept arrangements similar to those of the early-1950s, when substantial Soviet nuclear and conventional military assistance was promised but only sometimes delivered to Beijing."³⁶⁹ Ten years later, with Sino-Russian arms trade cooperation in its early stages, Gill and Kim also question the likely future intensity and scope of continued military-technical cooperation between Moscow and Beijing. However, we should note that Sino-Russian cooperation in this field is now going on nearly ten years, with no significant reduction or cut-off in sight. The fruits of that cooperation are beginning to show themselves more obviously in terms of force deployments and require careful attention.

Underestimation of Development and Deployment Cycles: The literature on this topic, from the trade press to academic and government analysts, often grossly underestimates the development time required for China to design, produce, procure, and deploy a given weapon system. This has probably been most egregious in discussions of various Chinese combat aircraft, from the FB-7 to the F-10. For example, in spite of otherwise cautious assessments, Gelber in

³⁶⁹Tow, "Arms Sales," op. cit., p. 158.

1979 predicts that "a new delta-winged combat aircraft was understood to be on the drawing boards [F-10?], but it would probably not be deployed before the early or middle 1980s." In a similar vein, Shambaugh in 1983 finds that the "aircraft industry" has been designated a "'key point' . . . and will receive a large portion of defense investment funds in the 1980s. The interceptor force is expected to reap most benefits and substantial overall qualitative improvements are expected in the next decade."³⁷⁰ Even Frankenstein sounded an optimistic note in 1986: "If modernization of technology and personnel continues, China will emerge less beholden to the past and, paradoxically, because of increased involvement with the outside world, more self-sufficient in the business of weapons development."³⁷¹ A Chinese aircraft carrier has also been the subject of frequently exaggerated expectations. As early as 1984, Clarke reported that the "PLA Navy now has plans for the construction of five new 20,000 ton aircraft carriers over the next five years."³⁷²

In conducting such studies, analysts would do well to consider two key works which provide a more realistic understanding of Chinese R&D and weapons deployment cycles. In the aircraft sector, the work of Allen, Krumel, and Pollack compellingly illustrates the lengthy and tortuous process required in China for development and deployment of combat aircraft within the Chinese defense industrial base. Similarly, Yung's work on the Chinese Navy explains the long lead times and often-failed development efforts which characterize the Chinese defense production system.³⁷³ The point here is not to say "gotcha!!" but to remind ourselves to make a serious effort to build in as much context and nuance as we can for our predictions.

A part of the problem here—at least in much of the trade press—may be a too-ready acceptance of Chinese official rhetoric about its defense industrial abilities and goals. Of course, the Chinese government often exaggerates its defense-industrial prospects for propaganda purposes. It is the more serious insider critiques of the system that have begun to emerge publicly in the late-1980s and early-1990s that ought also to receive more serious consideration. The words of Gelber may be helpful in this regard: "There has been an historic tendency for Chinese administrations to maintain assertive and bombastic

³⁷⁰Gelber, *Technology, Defense, and External Relations*, op. cit., p. 53; Shambaugh, "China's Defense Industries," op. cit., p. 57.

³⁷¹Frankenstein, "Chinese Weapons Development," op. cit., p. 86.

³⁷²Christopher M. Clarke, "Defense Modernization: How China plans to rebuild its crumbling 'Great Wall,'" *China Business Review* (July/August 1984).

³⁷³Allen et al., *China's Air Force*, op. cit., pp. 144–147; Christopher D. Yung, *People's War at Sea: Chinese Naval Power in the Twenty-First Century* (Alexandria, Va.: Center for Naval Analyses, March 1996).

language even at a time of obvious and conscious political and military weakness. Decisions to leave undisturbed the evident gap between declaratory language and the analyses on which practical policies had to be based may have served the purposes of domestic morale and cultural cohesion as well as those of maintaining external aims in principle, pending the achievement of the means to fulfill them.”³⁷⁴

Too Much Focus on “Hardware,” Not Enough on “Software” and Dual-Use Imports and Development: Given the availability of information on the “output” of Chinese military-technical development, there is an overly-strong tendency by analysts to focus on quantitative “hardware” analyses or “bean counts.” The future development of military technology, with its focus on the “digital” rather than “analog” technologies and its increasing reliance on “commercial off the shelf” (COTS) and other dual-use inputs, makes it all the more important not to focus on simple hardware compilations as a reliable assessment, but instead to address issues related to components and other sub-systems.

Impact of Reform and Reorganization: With each round of defense industrial reorganization (there have been five major reshufflings since 1980) and newly-inspired calls for “defense conversion” in China, analysts often assume these changes will be the ones to turn the Chinese defense industrial base around. However, rather than focus on flow charts, analysis of reorganizations should focus on how well the newly designed system overcomes past political and organizational problems. Tow rightly noted in 1984, for example, that the creation of COSTIND, while intended to act “as a clearinghouse for assessing defense-related research and development in the PRC and to serve as the coordinating center for the PLA weapons procurement,” would have its real impact “diluted” by the apparent dominance of personnel with “political” rather than “professional” backgrounds.³⁷⁵

Future Research

Procurement Process: A gaping hole in our understanding is how the Chinese arms R&D and procurement process works. This would include more specific understandings of research institutions, R&D priorities, and a more precise assessment of the degree and nature of direct foreign assistance from Russia, Israel, and others such as Pakistan and Iran. Some interesting work about the

³⁷⁴Gelber, *Technology, Defense, and External Relations*, op. cit., p. 8.

³⁷⁵Tow, “Science and Technology,” op. cit., p. 17.

arms procurement process by Chinese analysts has emerged in recent years, but much more work can be done.³⁷⁶ Information as to process will tell us more about bottlenecks and efficiencies affecting output and about where China is placing its defense priorities.

Integrating Outside Work on Technology Development: Most of the work in this field has ignored important theoretical and practical case study assessments on the question of technology R&D and production in developing and emerging economies. Only a handful of persons regularly attempt to integrate this body of insight into a more robust understanding of the Chinese defense industrial base (Baark, Frankenstein, Frieman, and Latham, most prominently). As China's defense industrial base becomes more integrated into the civilian and global economies and becomes less an isolated and hulking bastion, and as dual-use technologies become a more critical factor in determining Chinese capabilities, analysts will need to turn even more to questions of technology absorption and integration, "innovation networks," and industrial restructuring. In this sense, analysts should be even more reliant on the insights of engineers and managers who have worked with Chinese counterparts to solve technology absorption problems. Better yet would be to draw out such individuals, whether Chinese or foreigners who have worked in China, to produce more in-depth analyses on Chinese defense and dual-use production capabilities. A good example of this kind of approach would be the Defense Science Board publication which utilized engineers and scientists to evaluate the capabilities of and possibilities for U.S. cooperation with several defense industries along the Pacific Rim, including China's.³⁷⁷

The Capabilities Versus Aspirations Debate: This is the central debate to be reconciled in our analysis of Chinese military-technical development. Coming closer to consensus and appropriate policy responses will require continued research and an emphasis on new sources of insight and information. Analysts both of the "third phase" and of the "skeptics" schools need to retool their research approach. One of the challenges of the emergent body of literature of the "third phase" is to craft its arguments in ways which would either integrate or conclusively counter the comprehensive and long-standing series of scholarly work which points to the various "limitations" of manpower, technology absorption, systems integration, lack of resources, and other "constraints" on the Chinese military-technical development process. Beyond

³⁷⁶Chinese Country Study Group, "China," op. cit.

³⁷⁷Defense Science Board, *Defense Industrial Cooperation with Pacific-Rim Nations*, DTIC Report ADA 216 021 (Washington, D.C., Office of the Undersecretary of Defense for Research and Engineering, October 1989).

reports of different systems, what evidence do we have as to real serial production and deployments? How capable is China of integrating dual-use technologies into its defense production process? How will new systems and technologies be absorbed and integrated into the Chinese force structure? Does the PLA really want these weapons? At present, the “third phase” still tells us more about “acquisitions” than about actual capabilities.

On the other hand, the skeptics need to do far more work in recognizing the remarkable transformation of the Chinese economy overall, its steady military-technical relationship with Russia and others, its growing strengths in science and technology, and its access to increasingly sophisticated technologies in particular. Owing to macro-changes at the global level, China today is in an unprecedented position in terms of access to sophisticated, militarily-relevant systems and technologies. A real problem is getting one’s hands around the question of China’s burgeoning dual-use imports and the impact they have on military-technical development. In the end, the skeptics are guilty of too often seeing what the Chinese defense industrial base has been, rather than recognizing how far it has come and where it could be.

Wortzel offers a balanced approach on this question. He acknowledges China’s current economic success, but asks whether Beijing can successfully translate it into military power. He concludes that China certainly has the potential to become a formidable military power, but its path to that outcome will be fraught with internal, “resource demanding” problems. That fact, combined with a Chinese understanding of what happened to the Soviet Union when it attempted an arms race with the West, will likely place important limits on China’s military modernization. Still, given uncertainties, not least of which is a continuing dearth of solid information about Chinese capabilities and intentions, China’s military-technical development demands continued close scrutiny and analysis.³⁷⁸

³⁷⁸Larry M. Wortzel, *China’s Military Potential* (Carlisle Barracks: Strategic Studies Institute, U.S. Army War College, October 1998).

8. Comments on "China's Military-Technical Developments: The Record for Western Assessments, 1979-1999"

By Larry M. Wortzel

In this paper Dr. Gill adds another thoughtful, well-researched piece to the body of his published work, outlining well the trends in, and success or accuracy of, Western assessments of China's military-technical evolution over the last 20 years. Dr. Gill has divided the period in question into three phases: the establishment of formal U.S.-China diplomatic relations in 1979 through the late 1980s, capped by the Tiananmen massacre in 1989; the post-Tiananmen estrangement between China and the West, through the mid-1990s; and the most recent phase in the latter half of the 1990s to the present, in which the West takes a more critical view of China and its military developments. His collation and review of the most relevant and accurate literature published in each phase is a major contribution to scholarship in the China field. In addition to giving us an assessment of how well China analysts have performed, he has provided a systematic bibliography of the relevant, even seminal, literature that must be read by any serious student of the Chinese military.

Dr. Gill's own assessment is that his paper has some limitations. It does not cover much of the literature that may have come out of the Soviet Union on China before the breakdown of that state into Russia. Also, Dr. Gill has focused on major books, scholarly articles in journals, and research monographs, primarily from the United States. But he has reviewed some of the more technically oriented trade publications of the business and high-technology community, such as *Aviation Week and Space Technology*. Although Dr. Gill notes that a broader approach is needed, I believe that there is a wealth of untapped, albeit not easily collated, information in these periodicals. Nor has Dr. Gill surveyed Western European trade and defense publications for articles on China. Rather than critique aspects of the paper that Dr. Gill has already pointed out, I will direct my comments to the general state of studies of China's military-technical development. My comments will focus on areas and methods he has not mentioned that, if explored, might improve on our

understanding of the strengths and weaknesses of China's military-technical system and its development.

International Politics

One area that would profit from fuller discussion in Dr. Gill's paper is the international context in which Western, especially United States, interest in China's military-technical development took place. It is important to note that in 1979, when the United States and China began to view each other as strategic partners in an effort to limit or contain Soviet (or Vietnamese) expansion, the Soviet Union had invaded Afghanistan, Vietnam (with Soviet naval forces in bases formerly occupied by the United States) had invaded Cambodia, and Vietnamese forces were poised on the Thai border. The United States had suffered a defeat in Vietnam not five years earlier and because of its own domestic politics could ill afford to come to the aid of its mutual defense partner, Thailand. It was in this context that the United States began to consider how it could work with China's military and its defense industries to improve the capabilities of the People's Liberation Army without creating a serious threat to Taiwan or on the Korean Peninsula. These issues may seem intuitive or self-evident to those who are deeply versed in Asian matters, but they are worthy of mention.

Another significant factor that could use elaboration is how the perception of a threat to the national survival of the United States or a serious threat to the U.S. homeland changed the dynamic of U.S.-China relations. After all, it was not until 1980 that China launched its first intercontinental ballistic missile in a test in the South Pacific.³⁷⁹ And no real nuclear threat to the United States was taken seriously until the 1996 conversation that reportedly took place between former Ambassador Charles Freeman and a member of the Chinese military leadership, reportedly Lt. Gen. Xiong Guangkai. Today, with the development and testing of the mobile, solid-fuel *Dong Feng*-31 ballistic missile, the threat to the United States and its deployed forces is even more serious.³⁸⁰ Thus, in 1979, when the United States really cemented its strategic cooperation with China, PRC military capabilities were not strategic or global and did not threaten the United States. China's missiles could only attack the Soviet Union and potentially threatened U.S. forces in Korea and Japan. We did have

³⁷⁹The test took place on 16 May 1980, and was preceded by about two years of oceanographic exploration in the area of the South Pacific off Fiji. The naval task force supporting the test was about 18 ships, the largest Chinese fleet to sail into blue water to date.

³⁸⁰*South China Morning Post*, 3 August 1999, p. 8; *The Washington Post*, 3 August 1999, pp. A1, A11.

problems maintaining limitations on military technology and industrial cooperation with China. But the mechanism of COCOM (the Coordinating Committee for Multilateral Export Controls) provided a sort of security blanket around industrial cooperation with China, since all of NATO (minus Spain and Iceland) and Japan agreed to consult on technical cooperation and sales.³⁸¹

The *raison d'être* for COCOM broke down with the implosion of the Soviet Union and the freeing of its satellite states. Before that, however, COCOM had already ceased to be of any real use with respect to China, since the latter was seen by the United States and Europe as a growing economic power with a strong potential market. But international controls were still imposed on China by another mechanism in the wake of the Tiananmen massacre. It would be useful if Dr. Gill explored the Madrid Sanctions of 1989 and discussed fully why the Madrid Sanctions did not work. In a multilateral setting involving all of NATO, Japan, and Australia, nations agreed not to sell military end items or systems to China as a sanction because of the People's Liberation Army's attack on democracy demonstrators in Beijing. How, one might ask, is it possible then that China could obtain airborne early warning radar and aircraft from England, Israel, and Russia in the wake of these sanctions? How is it possible that the PLA has obtained air-to-air refueling systems from England and Israel in the wake of these sanctions? The answer is that the Madrid Sanctions were always weak and were aimed at entire systems. They have eroded over the years and have been interpreted by many countries as prohibiting the sale of military end items, but not technology or components. It would be useful to track the technologies embedded in these two combat support systems (air-to-air refueling and airborne early warning radar) by origin. Doing so would also demonstrate what the Center for Naval Analyses has pointed out in one of its studies, that it generally takes about 15 years or more for China's military industrial complex to produce a new system, even with foreign assistance.³⁸²

With respect to national interest and its effect on arms or high-technology defense-related transfers, it is not just a matter of principle that keeps the United States from joining its European allies and Israel in selling to China. This goes beyond questions of human rights related to Tiananmen. Perceptions of potential threat and enlightened national interest are also involved. These more distant countries do not have the same kind of stake in the peace and

³⁸¹See Department of Defense Directive Number 2024.2, "International Transfers of Technology, Goods, Services, and Munitions," 17 January 1984. See also Larry M. Wortzel, "U.S. Technology Transfer Policies and the Modernization of China's Armed Forces," *Asian Survey*, Vol. XXVII, No. 6 (June 1987), pp. 620-622.

³⁸²Christopher D. Yung, *People's War at Sea: Chinese Naval Power in the Twenty-First Century* (Alexandria, Va.: Center for Naval Analyses), March 1996.

stability of the Asia-Pacific region as the United States. There is no French, German, Italian, British, Israeli, or Spanish military force forward deployed or forward stationed on China's periphery. More important, there are no mutual security treaties committing the countries mentioned above to go to war in defense of countries on China's periphery. It is for these reasons that these countries can afford to have a much more liberal interpretation of the Madrid Sanctions. Finally, it was the United States that had a mutual defense treaty with the Republic of China, which was replaced with the Taiwan Relations Act when the United States unilaterally abrogated its commitment to Taiwan. Thus, what the United States might do in improving the People's Republic of China's military-technical development has a direct effect on Taiwan until such time as the PRC renounces the use of force against that island. And even in the event that happens, the United States is still faced with the fact that China continues to issue veiled threats about Korea and a not-so-veiled threat in 1996 about the use of nuclear weapons against Los Angeles.

There is another issue that I believe all of us involved in assessments of China's military and supporting industries must consider: That is, what is it that should enable or empower one to judge military-technical development levels and rates? The following paragraphs explore this matter.

Who Should Judge Military-Technical Capability and Progress

One serious question that must be asked is who is best equipped to assess China's military-technical progress. Most of the references that Dr. Gill consulted, indeed, the majority of studies that have been made, are written by people with social science, cultural studies, history, or regional studies backgrounds. How many of these people have ever been formally trained in applied research and engineering? How many of these people have ever managed a modern, high-technology production line? Our problem, and I include myself in this group, is that none of these people has any practical experience in the design, systems engineering, and production of military and high-technology systems.

In my opinion, another approach is needed, even if it is the non-technicians who try a different methodology. Jim Mann's excellent book, *Beijing Jeep*, updated in 1997, provides a superb example of what can be done with a case-

study methodology.³⁸³ Mann documents all of the institutional and bureaucratic problems that caused the production of Jeeps in China to be so poor. What I find so remarkable and worthy of study in Mann's book is the method. He systematically interviewed all levels of engineering and management to gain an appreciation for weaknesses of the production system.

Another short, single-case study can be found in the few paragraphs devoted to the matter in my own monograph, *China's Military Potential*.³⁸⁴ In that case study, I was able to interview a Western production engineer and manager with years of experience in aviation manufacturing in Chinese companies. He could explain clearly and succinctly the strengths and weaknesses of military-technical development in China. I was able to use a similar approach when I was assigned as a military attaché in China and it proved very useful in helping to assess a particular sector of the Chinese military electronics industry.

In 1988 I took part in the delivery and field testing of two AN/TPQ-37 *Firefinder* artillery-locating radars to China. Within a year, at a defense exhibition, *Asiandex*, in Beijing, I found a near-exact, but miniaturized, clone of the system (larger than the AN/TPQ-36 but smaller than the -37) on display by a Chinese manufacturer. The PLA had designated this the "Type 704 Radar." As I began to try to unravel how this was cloned, I found that the Chinese Army had ordered from the U.S. radar manufacturer a large number of certain radar parts. In fact, the PLA seemed to have had the highest failure rate in the world with one of the most reliable parts of the TPQ-37, suggesting that they had failed in efforts to reverse engineer that particular part.

I also noted at the same exhibition that a Western ally of the United States, a NATO country, had on display its own artillery-locating radar, which they were selling to China for licensed production. I called the corporate president for China and got a great interview that set out all of the strengths and deficiencies of the radar and military electronics industry. The gentleman was even kind enough to break engineering problems down in lay terms so I could understand them. Such an approach, if systematically applied, may bring about a positive change in the literature in the field.

The European corporate president also proved willing to discuss his company's philosophy about high-technology transfers and sales to China. Simply stated, this particular company and its home country's foreign and defense ministries

³⁸³Jim Mann, *Beijing Jeep: How Western Business Stalled in China* (Boulder, Colo.: Westview Press, 1997).

³⁸⁴Larry M. Wortzel, *China's Military Potential* (Carlisle, Pa.: Strategic Studies Institute, 1998), pp. 18-20.

did not care what China reverse engineered and used for the PLA or sold to third countries. The company believes that its own research and development efforts were very advanced, far beyond the technological level of what it had sold to China. The company had also determined that while its research-to-production cycle was five to seven years, it usually took the PLA and China's defense industries much longer to go from prototype to production, usually about 15 years. Indeed, China often did not get beyond a few prototypes. So that company did not care if China reverse engineered or sold equipment which by the time it got around to doing so would be a generation old. The company was happy to dump its outdated system on the PLA for a profit as long as it did not provide the full manufacturing capability.

The attitude of this European company is reinforced by one of the best studies I have seen that effectively sets out just how bad the military industrial production cycle is in China, that by Christopher Yung of the Center for Naval Analyses.³⁸⁵ Yung tells us that on average it takes at least 15 years for China to produce anything, if prototypes go to production at all. Ken Allen's study on the Chinese Air Force contains similar conclusions.

It is useful here to mention two exemplary studies by the U.S. Department of Defense that also took a case study, sectoral look at military-technical production. They are important because for each study a group of applied engineering and production experts were assembled to conduct the assessment. In its 1986 study, the Defense Science Board reviewed the use of off-the-shelf components in military equipment.³⁸⁶ This particular study concluded that the Department of Defense was wasting time and money in developing many items to military specifications. It is a concept that has great utility for China's military-technical development, since joint venture and licensed production is modernizing and improving at a faster pace than the defense industry.

The second study I commend to the reader as an example of what I think is the approach we need to take was conducted by former Secretary of Defense William Perry between his periods of government service. In it, a team of

³⁸⁵Yung, *People's War at Sea*, appendices.

³⁸⁶Defense Science Board, *Use of Commercial Components in Military Equipment* (Washington, D.C.: Office of the Under Secretary of Defense for Research and Engineering, 20 July through 1 August 1986), DTIC Report ADA 274 729.

applied research and production engineers explored key technical sectors of foreign industry to determine the potential for industrial cooperation.³⁸⁷

Dr. Gill discusses this study on page 15 of his paper. The effort led to the now-defunct "Defense Conversion" program with China, which some of us would argue was an ill-advised program. Notwithstanding the *method* is what is important. Not to belabor the point, but this was a group of highly experienced production managers who could make educated judgments about what China could do from a military-technical standpoint.

The organization of production in China, specifically the Third Line (*di san xian*), had a strong basis in the national security and defense strategy of China at the time it was organized (the 1960s). On pages 2 and 3 of his paper, Dr. Gill discusses the infrastructure obstacles of the Third Line system. But for the time, the strategy of dispersal to preserve an industrial base was a rational reaction to an overwhelming nuclear threat from the Soviet Union and the United States. Dr. Gill's discussion of the obstacles China's defense industry faces—political interference, tradition, resource constraints, technological and organizational problems, poor prioritization, and an antiquated procurement system—is right on the mark. These problems seem to defy solution. But it is the issue characterized by Dr. Gill as the "capabilities versus aspirations debate," on page 15 of his paper, that is the most critical question for those who are concerned about China's future military strength.

Finally, since Dr. Gill's paper closed with a reference to something I wrote, I want to mention here why China's military-technical development demands close scrutiny. In my monograph I use the example of how vastly improved management and systems engineering in an air-conditioning and refrigeration company transformed the Hai Er Corporation from a poor, collectively owned industry into a national leader in the field in about five years. That can happen anywhere in China in any industrial sector. As Zhu Rongji said in the United States, China does have some good scientists and managers. Often they are impeded by layers of bureaucracy and a terrible work ethic, but they do a great job in some areas critical to the defense sector such as in short-range missile systems, radar signal processing, and writing computer code. Properly applied, the fruits of their labors can do serious damage to forward-deployed elements of the U.S. armed forces and perhaps near-fatal damage to Taiwan. Moreover, the spinoff effect of improvements in the commercial and civil manufacturing sector will improve military systems as well. The return of Chinese students and industrial managers who have studied and worked in the West, like the

³⁸⁷Defense Science Board, *Defense Industrial Cooperation with Pacific-Rim Nations* (Washington, D.C.: Office of the Under Secretary of Defense for Research and Engineering, October 1989), DTIC Report ADA 216 021.

manager of Hai Er or the rocket scientist Qian Xuesen, will help China's military-technical development. Prudence and enlightened self (national) interest therefore dictate care in what is sold or transferred to China at this stage of its growth.

9. CAPS and the Study of the PLA: A Review Essay

By Jonathan D. Pollack

In the foreword to the first yearbook on PLA affairs published in 1988, Richard Yang offered an uncomplicated rationale for studying the People's Liberation Army. China had by that date been seeking to modernize its military power for a decade, resulting in "much progress" in weapons development, space programs, arms sales, defense industrial reform, and foreign technology acquisition. The PLA's enhanced military power meant that China was "gaining rank as one of the most powerful Communist countries. Its behavior will affect world peace and security for years to come." At the same time, international politics in general and U.S.-Soviet-Chinese relations in particular were experiencing "complexity and mutability." In addition, the PLA was certain to play a "leading role in Chinese internal politics, regardless of whatever political changes may take place in the future." The need to "update, summarize, and evaluate critically the PLA's defense modernization" seemed self-evident, with the expressed goal that the inaugural volume would be "the first in a series we hope to continue." (Yang, 1988, p. v)

Over a decade later, this justification is even more compelling than when first proposed, and the record of research accomplishment demonstrable. In the intervening 11 years, 9 collaborative volumes have been published, first under the auspices of the Sun Yat-sen Center for Policy Studies (SCPS) and subsequently by the Council of Advanced Policy Studies (CAPS). The last five of these volumes have been published in collaboration with leading international institutes (specifically, the International Institute of Strategic Studies, *The China Quarterly*, and RAND). In addition, between 1989 and 1991 SCPS issued seven occasional papers and since that time CAPS has produced an additional 25 papers. While not the only outlets for the analysis of Chinese military affairs, SCPS and CAPS were the pioneers. They convened international conferences through which scholars and analysts deliberated the full range of issues in the study of the PLA and then disseminated the research findings. Equally notable, the sponsors (though based in the Republic of China) were totally free of ideological preconceptions or pursuit of a particular policy agenda: The

commitment was to serious scholarship, not to politically mandated research results.

What began as an effort to share insights and data and to broaden understanding has in the intervening years assumed a life of its own. PLA studies have mushroomed over the subsequent decade, with SCPS and CAPS integral to this process. The number of analysts focusing on Chinese military affairs has increased dramatically since the inaugural conference in 1988, perhaps in ways that the organizers could not have anticipated. It is easy to lose sight of the extraordinary accumulation of knowledge since the first conference. The edited volumes and occasional papers attest to this knowledge, which reflects the growing salience of China (and of China's military power) in international security studies as a whole.

But the emergence of this field of study has proven a mixed blessing. We are no longer a small, tightly knit research community, and to discern the big picture seems an ever larger challenge, especially given the exponential growth in source materials. There is an increasing unwieldiness and (at times) a lack of rigor in the field's rapid development. Indeed, many of the newcomers to PLA studies are not China analysts in the conventional sense of the term, but strategists and security policy specialists seeking to fit China into a larger intellectual construct. While serving as Chairman of the Joint Chiefs of Staff, Gen. Colin Powell famously remarked that "other than Iraq and North Korea, who have I got?" For many security specialists, China seemed the obvious answer, not necessarily as a substitute threat, but as a central object of study, both in theory and in practice.

But there are other factors at play. For many commentators, China is the emergent threat destined to supplant the Soviet Union as the preeminent focus of U.S. global strategy. This proposition warrants very serious scrutiny. But its simplicity and convenience provide an easy allure for those who wish to assume and assert rather than analyze. In a word, the study of Chinese military affairs has been politicized. However, my primary purpose in this chapter is not to consider the manifestations or implications of this proposition. But analysis of the PLA is no longer an obscure field of study left largely to a small group of like-minded specialists. It is now an increasing preoccupation among a much larger cross section of analysts and commentators. For better or worse, China and the PLA have been "discovered," and this reality has redefined the study of Chinese military affairs and the uses to which research will be put.

However, this chapter is not a policy review, but an excursion into the intellectual development of a field of study. For the sake of simplicity, I will

limit my observations and reflections to the conference volumes produced under the sponsorship of SCPS and CAPS. I make no claims to being comprehensive in this chapter, and my approach excludes a great deal that has been produced in research monographs, in scholarly journals, and in other conference symposia, especially those produced by the American Enterprise Institute. Viewed as a whole, however, the SCPS and CAPS volumes constitute a large and very important slice of how we have approached the PLA as an object of study. (My use of "we" throughout this chapter is shorthand for the aggregate set of participants at these annual conferences. It is not meant to imply that all present agreed with one another!) These publications serve as a window into our prevailing assumptions, preoccupations, and expectations, both about the PLA as an institution and about China as an international actor. They also reveal a good deal about our efforts to grapple with changes that we neither foresaw nor understood fully, but to which we were compelled to react. This chapter should therefore be seen more as a chronicle and less as a state of the field review.

I will begin with some broad observations. First, as a group we have been disinclined toward sweeping judgments, even as many analysts have ventured into issues that barely existed in the past. In essence, there was a collective recognition that the study of the PLA was a "work in progress," introducing an element of caution into our assessments. Most sought to be empirically grounded in their judgments, even if this sometimes made judgments more tentative than necessary. As a result, there was a tendency in some of the annual reviews to miss elements of the larger picture, including the daunting challenges of large-scale weapons modernization. Second, and perhaps somewhat contradictory, most analysts were prepared to revisit issues explored in earlier research, though fewer were ready to reassess earlier findings in light of subsequent events. Though there was ample attention to the hardy perennials in PLA studies (e.g., leadership relations, Party-army linkages, military doctrine and organization, defense economics, service modernization trends, and Center-regional dynamics, to note some of the principal areas), analysis was anything but static. It is to the field's collective credit that we did not opt to protect our rice bowls, but instead recognized that developments in the PLA required us to look at emergent realities, not defend past verities (or past publications).

Third, and perhaps most important, I am struck by how much we got right, not in a predictive sense (few seem inclined in this direction), but in posing the most important questions and in identifying where we needed answers. In the more than one hundred essays and contributions to these volumes, there is

very little that strikes me as foolish or monumentally wrongheaded. In any line of scholarly endeavor, that is impressive; in a field of study where the owners and operators of the institution in question had few incentives to reveal very much, this is even more notable.

If the field can be collectively faulted, it is with respect to surprises or outright shocks that none of us could have anticipated. Three in particular stand out: (1) China's domestic leadership crisis of 1989, and what it imposed on the armed forces; (2) the collapse of the Soviet Union; and (3) the revival of U.S. power. To a somewhat lesser degree, most analysts were slow to grasp the larger implications of China's internal economic and social transformation and how these changes would profoundly influence the institutional challenges confronting the PLA. But two of these factors (Soviet collapse and U.S. resurgence) were exogenous to the PLA and as such were not on the radar screen of most analysts (nor, for that matter, were these possibilities seriously pondered by the strategic studies community as a whole). The leadership crisis of 1989 was not foreseeable in a predictive sense and we have shown collective good judgment in refraining from what Stanley Hoffmann would characterize as "ex post facto omniscience." China's societal and economic transformation seems the one area where PLA analysts had to react to larger developments that many initially failed to grasp. But students of the PLA were hardly unique in this regard and subsequent scholarship has reflected a healthy awareness of the implications of these changes for the PLA as a whole.

The annual conferences also revealed how analysts grappled to understand an institution undergoing major stress and change, but without enjoying the access or data needed to render more definitive judgment. These meetings were more than an annual pulse taking; they reflected a collective effort to comprehend the dynamics under way within China and perhaps with greater success than many of us realized in the midst of our annual deliberations. Some illustrations follow.

Chronicling China's Military Evolution

With a single exception, each conference volume published since 1988 has reflected the flavor and mood at the time of the meeting. (The exception was the conference co-sponsored by *The China Quarterly*, since it was intended principally to assess the state of the field.) The inaugural volume necessitated a baseline view of our knowledge following a decade of reform in China. But many of the contributions to the first symposium have a snapshot, largely descriptive, flavor. The essays by Harry Gelber (on defense modernization),

Harlan Jencks (on the air force, nuclear, and space programs), and Ellis Joffe (on civil-military relations) were notable exceptions in this regard. Each sought to examine their respective topics both retrospectively and prospectively, as well as trying to identify policy dilemmas and choices faced by China's military leadership.

The most notable essay in the inaugural volume was Yitzhak Shichor's chapter, "The Year of the Silkworms: China's Arms Transactions, 1987." Shichor captured vividly the dramatic changes in China's arms transfers policies, highlighting the shifting calculus of Chinese foreign policy, and the regional implications of China's increasing involvement in weapons sales, with particular attention to sales in the Persian Gulf. Domestic and institutional forces, he argued, were leading Chinese policymakers to view weapons sales as an explicit tool of Chinese diplomacy and as a source of revenue at a time of increasing budgetary stringency. It is easy to forget the novelty of this phenomenon at the time, given the moral high ground that the Chinese had always assumed when their weapons were free and not just for their foreign recipients. As Shichor concluded: "Following years of Maoist self-imposed isolation, and a few years of post-Mao hesitation and reluctance, the Chinese seem to have made up their mind to begin and play the role of a self-confident great power that can no longer be ignored." (Shichor, 1988, pp. 161-162) Shichor had identified a fundamental policy decision with substantial implications for regional security and for the distribution of power within the Chinese defense establishment. He deserves credit for being among the first to grasp the implications of these shifts in Chinese external behavior.

The second yearbook, published in December 1989, was a victim of circumstances and timing. The stated goal of the meeting was to project longer-term trends (specifically, to make projections about the PLA's capabilities and policies in the year 2000). In retrospect, this may have been looking too far ahead, and too soon. But the larger precipitating event that diverted attention from a strong collection of papers was Tiananmen and its aftermath. As Richard Yang noted almost ruefully in his foreword, "Inasmuch as the PLA did play a leading role in the incident, the PLA's political role in the post-Deng period [now] becomes the overriding concern of our editorial board." (Yang, 1989, p. v) However, the papers for the 1989 volume had been commissioned and prepared prior to China's internal crisis, and the contributors made either fleeting or no reference to Tiananmen. Thus, the estimates of the authors were not so much overtaken by events as overwhelmed by them. No event of the past decade stunned PLA watchers as dramatically as had Tiananmen, and the internal crisis subsequently compelled many analysts

to revisit their prevailing assumptions, though not by the time that the second symposium appeared. Given the uncertainties prevailing at the time, this was a prudent decision. As a consequence, however, the second volume seems "out of synch" with the political realities at the close of 1989. It is hard to see how it could have been otherwise.

Quite apart from the domestic crisis, the international ground was also shifting in major ways. As observed by Robert Sutter in "PRC International Security Policy: The Year 2000," the late-1980s were a time of major strategic repositioning, including large changes in U.S.-Soviet relations and in Sino-Soviet relations. Sutter noted that "the Chinese change vis-à-vis the Soviet Union comes at a time of improved U.S.-Soviet relations, and thus does not appear to undercut substantially [the] U.S. ability to deal with the USSR. In short, the zero-sum U.S.-Soviet-Chinese triangular relationship that seemed so important for U.S. policy until a few years ago does not seem so important today." (Sutter, 1989, p. 25) Yet the assumption of a hostile (if not necessarily confrontational) Sino-Soviet relationship had been central to Chinese policy calculations toward both superpowers for much of the 1970s and 1980s. It was also a central justification of the "anti-hegemony united front" that Deng Xiaoping had assiduously cultivated with the United States. If *détente* between the superpowers diminished China's presumed strategic significance, then Chinese influence and leverage could easily decline, independent of the Tiananmen events.

Other contributors, however, perceived a more assertive China increasingly able to wield influence abroad, quite possibly to the pronounced detriment of its neighbors. Gerald Segal, for one, identified China as a rising power in search of a larger international role, even if in Segal's judgment this role was a disruptive and largely negative one. Comity between the superpowers, Segal argued, was not in China's interest, and leaders in Beijing sensed their growing capacity (notably through weapons sales) to complicate the efforts of Washington and Moscow to control various regional conflicts. At the same time, however, Segal believed that "the Chinese are finally coming to realize that there is no real threat to China." (Segal, 1989, p. 39) But he did not see the absence of a direct military threat as necessarily leading to Chinese self-confidence or external restraint.

The mandate of the contributors to the second symposium was to consider the longer term. This was necessarily speculative, but one contributor (David Muller) foresaw the day when China would be able to exercise coercive power against its neighbors (in particular, Taiwan) at acceptable levels of political and military risk. Though he projected a much more capable Chinese Navy in

another decade, Muller was prudent enough to recognize that large-scale modernization and an ocean-going fleet were not in the cards by the year 2000. However, as a U.S. naval planner he was honest in admitting that a much larger PLA Navy would make matters much simpler! But he was among the first at the annual symposia to think through scenarios that a decade later increasingly loom in our longer-term projections. In this respect, an annual stocktaking (if treated as a slice in time) ran the risk of missing the bigger picture.

None of the authors, however, could possibly have foreseen the impending tectonic shifts in international politics—that is, the disintegration of the Soviet Union and the end of the bipolar international system. All the contributors assumed (not unreasonably) the continuation of a two-superpower world, with China seeking to enhance its relevance and role in this context.

But the institutional challenges confronting the PLA were quietly looming much larger in leadership calculations than any expectations of Chinese power projection. In a notable essay on “Organization and Administration in the PLA in the Year 2000,” Harlan Jencks captured the dilemmas that faced the PLA in seeking to become a more credible military power: “Political control will indeed remain the primary concern of the national leadership in China. But the political organization of the PLA will have to change if it is to become an effective modern force.” Technological imperatives, he further observed (especially with respect to command, control, communications, and intelligence), would require major changes in organizational structure and culture, and perhaps much sooner than the PLA leadership was yet ready to acknowledge. (Jencks, 1989, pp. 43, 45) Indeed, Jencks’ estimate of PLA organization a decade later (i.e., 1999) in crucial respects reflects the policy dilemmas with which the PLA continues to grapple—that is, how to effect a transition away from a mature “Soviet style” military establishment when big was no longer better.

Jencks’ views were reinforced in a cogent essay by Richard Latham on defense industrial policy. (Latham, 1989, pp. 79–89) Latham noted the increasing tension between defense and economic development, which was compelling “move[ment] away from an autonomous defense industrial system toward integrated military-civilian production,” even as “social and political factors will constrain the speed and scope of downsizing.” (p. 88) Senior military leaders continued to argue for major new resource commitments to ensure Chinese security; Latham and several others cited the dyspeptic speech of Gen. Zhang Aiping to the 13th Party Congress as the most visible example of these demands. But it remained very doubtful whether and how China could narrow the prodigious technological gaps it continued to confront, in view of an

increasingly dysfunctional defense industrial process. If the Chinese made the right decisions, Latham argued, then a decade hence the services would increasingly be specifying their weapons systems requirements, enabling COSTIND to largely focus on the validation of R&D results and weapons systems performance. (Latham, p. 87) Echoes of these prescient observations continue to reverberate in the struggles over defense industry reorganization a decade later.

Thus, it was not the quantity of resources allocated to China's national defense that mattered most. An eerily accurate estimate of a Chinese defense budget of \$50 billion in the year 2000 (Liu, p. 103) foresaw substantial funds available for military modernization, assuming continued economic growth. But where would this leave the Chinese (again, recalling that no one was assuming the demise of the Soviet Union)? Arthur Ding's discerning assessment of nuclear weapons modernization tradeoffs predicted that China would have no alternative to relying on "political and psychological means" to buttress its still very modest retaliatory capabilities, "because Beijing's real capability cannot measure up to the level of its strategic thinking." (Ding, 1989, p. 130)

Even as analysts were seeking to look ahead, domestic events seemed to be turning the clock backward, and with a vengeance. Or were they? The 1990/1991 conference took place at a highly vexing moment for PLA analysts; political reform had been crushed, and repression at first blush seemed pervasive. SCPS had already sought to take stock of Tiananmen in a series of papers commissioned in the immediate aftermath of the crisis, but the third annual volume (published in April 1991) sought to place the domestic upheavals in a larger context. The assessments of many authors highlight how dispassionate judgment, not emotional reactions to the carnage of Tiananmen, enabled a clearheaded assessment of "lessons learned," as well as what lay ahead.

Simplistic judgments and stark predictions would have been easy headline grabbers, focused on a range of dark scenarios oscillating between military coup and state collapse. These nightmare scenarios were addressed, evaluated, and found wanting. Tiananmen had been a sobering reminder that the resort to coercion always remained an option for leaders in Beijing: Deng Xiaoping showed few compunctions about employing force when he believed it necessary, irrespective of the consequences. (I have long believed that Deng's actions in the runup to Tiananmen find a ready parallel in his pedagogical war against Vietnam. The events of 1979 and 1989 would make an excellent comparative case study. In both instances, many foreign observers and government officials simply did not believe what they were being told, thereby

compounding the reactions to China's use of force when it did occur. Such a study seems tailor-made for an eager Ph.D. candidate.)

The essays in the third symposium reminded numerous observers of a China and a PLA that many had forgotten. In other respects, the crackdown afforded analysts an unparalleled window into Chinese crisis behavior—in essence, the fog of war on the streets of Beijing. Tai Ming Cheung offered a revealing, judicious account of the events of April through June 1989. (Cheung, 1991, pp. 1–17) Cheung's cautionary assessment of the swirl of rumors and reports yielded a persuasive sense of the bigger picture, without embellishing his account with overwrought speculation and undocumented claims. But the question of whom and what to believe plagued analysts throughout the 1990s, especially claims of upper-level policy conflict over military affairs and widespread reports of PLA weapons purchases. Cheung's account of the 1989 crisis underscored that there was no alternative to the disciplined, careful weighing of all source materials, rather than an uncritical acceptance of information coming across the transom, no matter what the source.

The conceptual clarity of the 1990/1991 volume still seems very impressive. Ellis Joffe imparted vividly the agonizing dilemmas facing the military leadership as it was again drawn into China's political maelstrom. (Joffe, 1991, pp. 19–33) By virtue of its collective memory, temperament, and simple rigidity, the political leadership proved incapable of seeking a way out of the crisis, leading it to turn to the PLA to clean up the mess, only to create an even larger one in the process. As Joffe noted, however, "the consequences of non-intervention [for the PLA] . . . would have been far graver than the presumed costs of intervention. It would have meant for the first time in the history of the regime the PLA would have directly defied the authority of the Party leaders . . . the outcome of such defiance would doubtless have been catastrophic." (p. 27) Amidst the crisis of the moment, and even acknowledging the scattered evidence of insubordination by some commanders, Joffe reminds us of the difference between intention and consequence.

Other contributors drew attention to the subsequent consequences of the Tiananmen intervention for PLA politics. June Dreyer highlighted the leftward tilt within the military leadership following the crisis, while also noting that there had been no evident slackening in efforts to regularize and reequip the PLA. (Dreyer, 1991, p. 48) Gerald Segal, in reviewing assertions about PLA leadership actions, stated unequivocally: "If a coup d'état is a forcible seizure of power by the armed forces, then the People's Republic of China has seen no such thing." While acknowledging the renewed resort to political slogans, these efforts seemed "pale" compared to past campaigns, since the PLA seemed to

have far too much to lose in renewed politicization. (Segal, 1991, pp. 51, 59–60) To be sure, all the authors felt compelled to address the extent to which factionalism or even outright defiance of the Party's orders may have taken place. Though an important issue, most commentators focused on larger institutional dynamics, rather than on dramatic accounts of leadership divisions in the midst of crisis. This analytic choice served all the authors well, and the essays still remain insightful today: Repression and a reassertion of political control were the by-products of the intervention, but apocalyptic judgments were not warranted.

By the time of the appearance of the fourth symposium in 1993, major domestic and international developments had reconfigured the leadership of the PLA and the larger strategic assumptions shaping China's foreign and defense policies. In retrospect, the events of the early-1990s had a profound effect on our major analytic assumptions; it is therefore important to highlight some of the more important ones. The Persian Gulf War ended in a resounding success for the United States and its coalition partners, with Chinese military intelligence grossly misestimating the outcome of these events. (Beware the politicization of intelligence estimates!) Equally portentous events followed in quick succession: The Soviet Union disintegrated following the near-comic failure of a pseudo-coup, making the collapse of communist regimes in Europe virtually complete; Deng Xiaoping (accompanied by a virtual "who's who" of the PLA leadership) embarked on his Southern tour, opening the sluice gates on economic change in China in the subsequent half decade; and (in events that caught most China analysts by near-total surprise) Yang Shangkun and Yang Baibing were abruptly removed from their dominant power positions within the armed forces. All but the last of these issues were explored in depth in this volume.

China researchers are often faulted by non-specialists for their inability to anticipate events such as the ouster of the Yangs, but this is not an appropriate standard by which to judge the caliber of our insights and knowledge. There seems an undeniable fascination (especially among journalists) with assessments of the "who's up and who's down" sort, since it is readily marketable to editors and readership alike. But "insider" accounts always run the risk of being called up short by subsequent events; everything else being equal, analysis ought to avoid them. PLA studies are far better served by institutional analysis rather than seeking to divine elite-level political outcomes. The larger story at this time was the coalescence of the full array of post-Tiananmen policy directions, and these issues were fully aired in the 1993 volume. Indeed, it is telling how wrong some external assessments of China

proved at the time. As Robert Sutter notes (Sutter, 1993, pp. 14–15), U.S. governmental assessments (mirroring the popular disenchantment with China) envisioned a decidedly bleak political and economic forecast for China. (Many American commentators likely assumed, and probably hoped, that following the USSR's collapse, China would somehow be "next.") The symposium did not march in lockstep with these expectations, and the result was a forward-looking collection of essays that largely anticipated much that was yet to come.

Though time does not permit an extensive review of the individual contributions, a few warrant mention. Tai Ming Cheung (pp. 61–77) explored in ample depth and detail the emergent arms supply relationship between Beijing and Moscow, underscoring that China's near- to mid-term hopes for military modernization were, ironically enough, again in Russian hands, following a three-decade interruption. Harlan Jencks (pp. 95–120) surveyed and synthesized a wide array of information on China's emergent defense capabilities and doctrines, as the military leadership turned its attention in earnest to regional military requirements in the post-Soviet world. Though attentive to how enhanced military capabilities would serve larger foreign policy goals, and also acknowledging the generally risk-averse character of the PLA leadership, Jencks closed with a "yes but" caveat with respect to Chinese policy toward Taiwan: "The old men in Beijing remain capable of doing things which even they, in retrospect, may define as 'irrational.' This is particularly true regarding Taiwan." (Jencks, p. 115) Chinese strategic options vis-à-vis Taiwan, including the complex mix of alternative cooperation and coercion strategies, were assessed in a cogent assessment by Chong-pin Lin. (Lin, pp. 161–179) Lin identified "unarmed missile testing" as the fourth in an array of 11 potential strategic options. (p. 170) He acknowledged his hope that "public discussions of the conflict scenario . . . will serve not as a self-fulfilling prophesy but rather as a preempting deterrent so that these unfortunate situations will never arise." (p. 172) His essay remains an impressive analytic exercise that warrants our continued attention.

David Shambaugh explored the much-upgraded internal security functions and capabilities evident within the PLA since Tiananmen, reminding analysts that the PLA's emergent security role was both internally and externally driven. (Shambaugh, especially pp. 142–146) But the behavior of the PLA in a presumed succession struggle, as delineated by Ellis Joffe, was not foreordained. As Joffe concluded, "the [Chinese] army . . . does not always fit its widely-prevalent image. . . . [Its] common core of professionalism . . . [means that] the PLA will respond to [political] developments, not initiate them." (Joffe, p. 157) Joffe wisely abjured the temptation "to answer the unanswerable" (i.e.,

trying to predict the PLA's precise behavior in a leadership crisis); this caution still seems an appropriate maxim for all to heed.

But circumspection with respect to prediction did not imply an unwillingness to examine the PLA in a rapidly shifting economic and social context. The 1994 publication on Chinese regionalism broke new ground, highlighting how economic imperatives and opportunities were redefining the PLA's position within Chinese society as a whole. (Yang et al., 1994) This collection was the first of the "theme oriented" publications undertaken by CAPS; it was also the first time that CAPS collaborated with a major international institute (in this case, the International Institute for Strategic Studies—IISS). The controversies surrounding this particular meeting, including the expressed unhappiness from Chinese officials with a high-visibility PLA conference in Hong Kong focused on some very hot-button issues, are now a distant memory. (Those in attendance at the meeting may view this differently; I was not a participant.) But such episodes highlight how media attention can be a double-edged sword.

The results of the meeting are recorded in a first-rate collection of essays. The measured, somewhat fitful progress in the PLA's defense modernization contrasted profoundly with the army's growing envelopment in domestic economic change. These changes were redistributing power within and across various regions and provinces, even as wealth generation was sharply altering power relationships and institutional orientations within the PLA. (See, in particular, the contributions of Hong and Jacobs, Long, Goodman, and Yu, et al.) As the Chinese economy surged into overdrive, there was an understandable tendency to measure and assess the implications of such power accumulation. The larger story, however, was one of disaggregation, not aggregation, both in political and institutional terms. Regionalism triggered a host of powerful historical connotations within China, with separatism and warlordism heading this list. A deep aversion within the leadership to disintegrative tendencies and the loss of central control seemed likely to work against some of the more extreme possibilities, and most contributors cautioned against forecasts of systemic breakdown or other comparably dire forecasts.

But localism and corruption often correlated closely, especially when green uniforms were involved. The opportunities for profit gave various actors (including many in the military ranks) an incentive for retaining a looser set of institutional arrangements within which commercial activities could flourish. But such preferences clashed sharply with the presumed requirements for organizational cohesion and military professionalism. At the same time, military entrepreneurialism had a highly corrosive effect on morale within the

ranks. (Cheung, 1994, pp. 85-110) The longer-term consequences of the developments earlier in the decade continue to loom very large today, speaking to fundamental issues of power and authority within the Chinese system, and the capacity of central leaders to control the activities of military units at all levels. (The current leadership has redefined Clemenceau's dictum: Jiang Zemin and Zhu Rongji seem to believe that *commerce* is too important to be left to the generals.) This publication pointed analysis in important new directions, compelling analysts to explore very different dimensions of military behavior.

Such issues were pursued further in the 1996 publication, also in collaboration with the IISS. (Segal and Yang, 1996) The fuller dimensions of the PLA's commercial activities had implications at virtually every level of the military system, yet analysts had not previously made the economics of military power a central research concern. Few specialists on Chinese military affairs had the requisite skills to credibly address these issues, though there were exceptions. (Ding, 1996, pp. 78-92) But on-the-job training was not impossible, even if one leading specialist wondered out loud if the "numbers game" (in this instance, on estimating the defense budget) was worth the effort. (Godwin, 1996, pp. 53-77) It also proved possible to recruit those with relevant expertise to apply their skills to the study of the PLA; David Goodman's superb account of corruption in the PLA fits in this category. (Goodman, 1996, pp. 35-52) The external implications of PLA commercial activities (i.e., with respect to arms sales) also bore on these concerns, though the logic of such analysis necessarily entailed security and geopolitical influence as much as profit. (Godement, 1996, pp. 95-110)

The field of Chinese military studies was increasingly coming of age, and what better way to make it official than to commission a special issue of *The China Quarterly*? (Shambaugh and Yang, 1997) It is not possible to satisfactorily summarize this very weighty volume in a single brief essay. The collection as a whole charts the substantial development of PLA studies, in particular the utilization of a profusion of primary source materials, including many that are (at least nominally) classified (see, in particular Li, pp. 179-199, and Johnston, pp. 284-312); the creative use of interviews on highly sensitive decisionmaking domains (Swaine, pp. 96-129); and a turn toward ever denser, detailed assessments of the institutional system. That said, the symposium highlighted the increasing challenge of fitting the pieces together. Perhaps trying to tell a coherent, integrated story is now almost beside the point. But many of the authors, some quite explicitly, acknowledged that divining the larger meaning behind this wealth of detail was proving increasingly difficult. Who could have

imagined a decade ago that PLA studies would be suffering from a glut rather than a dearth of information?

The first question that needs to be addressed, therefore, is what we do with all this information, lest we fall prey to Stalin's dismissive description of historians as "vulgar factologists." The second question is why, collectively, we seem frustrated by the questions that we cannot answer, instead resorting to dueling anecdotes. The pace, scope, and scale of China's defense modernization continue to top this list; in few areas of Chinese military studies are the unknowns, uncertainties, and controversies larger, and yet less resolvable. Credible judgments about longer-term strategic intentions and program goals seem equally elusive and this may be as true for Chinese involved in these processes and decisions as it is for those trying to analyze these policy outcomes. Here as well, Ellis Joffe's injunction about not trying to answer the unanswerable may apply. Unlike the past, however, there is a growing array of professional talent intent on addressing these questions.

This roster of talent is becoming increasingly global in scope. Given the extent to which American scholars and analysts tend to dominate much of the professional debate, RAND and CAPS collaborated on a conference that led others to take the lead. (Pollack and Yang, 1998) It is a truism that the implications of the growth of Chinese power will be felt first and foremost by China's immediate neighbors and that China's presence and influence are seen very differently by these states. As a consequence, the policy options available to neighboring states, though to some extent paralleling some U.S. policy choices, have very different implications. Geography, history, and (very possibly) economic interdependence entail different choices for actors along China's periphery, including major powers such as Japan. As a number of contributors to the volume suggested, this did not mean that there was no alternative to automatic accommodation with China (or, even more abjectly, what we might term pre-accommodation). In discerning the available policy options—for Taiwan, Korea, Japan, Australia, India, Russia, and the states of Southeast Asia—one size definitely does not fit all.

The contributions to the 1998 volume highlight the clear attention that China now receives in strategic and foreign policy circles along its periphery, though the level and depth of analytic competence vary substantially from location to location. Probably the largest community of China expertise outside of the United States resides in Russia, much of it enhanced by ample, on-the-ground knowledge. Evgeniy Bazhanov's contribution to the symposium highlights the depth of this expertise, and the diversity of debate in contemporary Russia. (Bazhanov, pp. 70–90) Much of this debate is minimally reflected in Western

assessments, though it bears emphasis that those Russian officials and analysts capable of offering informed judgments about the PLA remain highly discreet in imparting their knowledge. The larger implication of these essays is that long-term relations with China constitute a defining issue for all of China's neighbors. Future outcomes will be shaped by external events, the internal evolution of the Chinese system, the pace of China's future military development, and (not least) the extent to which the behavior of China's neighbors leads officials in Beijing to take them seriously. At the same time, all states want credible options of their own, rather than ones that automatically follow an American lead. Many policy analysts deem future U.S.-China relations as the singular factor shaping international security in Asia and the Pacific. But the symposium highlighted the extent to which other actors are also acutely attuned to, and affected by, Chinese power and policy. A heightened awareness of the policy options and choices of China's neighbors seems long overdue not only in Beijing, but in Washington, as well.

Concerns about the potential for a longer-term U.S.-Chinese strategic competition are seldom far removed from assessments of the PLA's future capabilities. Yet the long-standing focus in PLA studies on hardware issues tells only one part of the story. To rectify this imbalance, RAND and CAPS saw the necessity of turning to the software side, resulting in a substantial edited volume devoted to this long-neglected dimension of Chinese military modernization. (Mulvenon and Yang, 1999) The essays in the volume vividly impart China's growing attention to these issues, upon which the effectiveness and credibility of China's future combat capabilities will be increasingly based. For China, the issues in this realm touch on critical dimensions of the PLA's future—the capacity of its commanders to think differently, to utilize advanced technologies in very different fashion, to devise doctrines and acquire capabilities appropriate to a very different style of war, to recruit and educate future officers in very different modes of conflict, and to generate results from the Chinese defense industrial system that address these needs in a meaningful fashion.

The contributions to the 1999 volume underscore that the ultimate outcomes in all these areas remain to be determined—a “work in progress,” as noted by Harlan Jencks. (p. 59) The PLA's attention to information warfare, for example, has grown hugely, though much of it seems explicitly imitative of U.S. writings, albeit with some distinctive Chinese attributes. (Mulvenon, pp. 175–186) Are the Chinese studying these issues largely to keep abreast of the ever-advancing innovations in U.S. warfare concepts? Do the Chinese approach the question of an RMA with full realization of its larger implications? How widely and deeply

are these innovations diffusing within the Chinese military system, or are we witnessing one more Chinese venture into formalism and ritualistic language, rather than a deeper transformation?

In other areas, however, the PLA is putting forward doctrinal concepts that seem much more indigenous in their sources and characteristics. (Li, pp. 146–174) Chinese exercises involving the PLA's rapid reaction forces reveal a clear direction and set of organizational goals and the accumulation of operational experience to build these capabilities in terms of both software and hardware. (Yang and Liao, pp. 48–57) Moving from doctrine to actual operations on a larger scale, however, will entail far larger transformations throughout the PLA, though a few forces at the apex of the system will serve as the focus of innovation and experimentation. But the larger challenge of disseminating such change across the force structure as a whole seems a prodigious, very long term task. (Blasko, pp. 258–288)

Perhaps the most significant dimension of the 1999 volume, however, is that it could even be prepared in the first place. The field of PLA studies, not unlike the military establishment it seeks to understand, has come a long way. Unlike the object of study, however, we seem to have gotten there much faster.

Some Special Commendations

This review essay would be incomplete if I did not acknowledge three special categories of accomplishment: (1) the most prolific authors; (2) the most memorable titles; and (3) the best examples of wit and wisdom. The first category is straightforward and objective—that is, who wrote the most frequently? The clear winner is Ellis Joffe, who in stunningly Stakhanovite fashion has contributed to eight of the nine symposia published to date! A suitable trophy must be found. Runners-up (with six contributions each) are Harlan Jencks and June Dreyer, with the former receiving a slight edge by fearing neither hardship nor death: He prepared two sole-authored chapters in the inaugural volume, but his sanity subsequently returned. Honorable mentions go to Gerald Segal and Tai Ming Cheung, each responsible for five essays (allowing half credit for co-authored chapters).

Accolades for titles are more subjective. The only titles of the conference volumes that seem even remotely memorable are from the two most recent symposia, so I award joint honors to myself (*In China's Shadow*) and to James Mulvenon (*The People's Liberation Army in the Information Age*). Among individual chapters, my favorites are: "Ties of Convenience: Sino-Soviet/Russian Military Relations in the 1990s" (Cheung, 1993); "Tying China In

(And Down)" (Segal, 1996); "Training Tomorrow's PLA: A Mixed Bag of Tricks" (Blasko, Klapakis, and Corbett, 1997); "Crisis, What Crisis?" (Yang, 1998); and "COSTIND Is Dead, Long Live COSTIND!" (Jencks, 1999).

Finally, there are the especially memorable turns of phrase penned by individual contributors. The attached quotations are ones that caught my eye while preparing this essay; it is entirely possible that other memorable observations eluded my attention. My favorites are noted below in their order of chronological appearance:

"Bradley Hahn . . . consistently gives PLA capabilities benefit of every doubt." (Jencks, 1988, p. 110)

"The enthusiasm of the naval analyst must be tempered by the realism of the accountant." (Muller, 1989, p. 137)

"The Tiananmen crisis . . . [found] the PLA cast as the chief villain. But the villain was also a victim . . . [since the PLA was] damned if it did and damned if it did not. . . . And if a new administration repudiates the actions of its predecessor, how will the PLA fare for having obeyed the orders of a discredited leadership?" (Joffe, 1991, p. 32)

"There is not a genuine Party-army problem but there is a Party problem! The Party can fix some of the army's problems, but it is unreasonable to expect the army can fix the Party's problems." (Latham, 1991, p. 119)

"Two months before the incident in Beijing, Soviet troops violently dispersed a crowd of 10,000 Georgian nationalists in Tbilisi, using poison gas. Twenty demonstrators were killed and more than 200 were hurt. The only difference there was that no image of the carnage had reached TV screens in the West." (Tan Eng Bok, 1991, p. 126)

"The PLA did not intervene in a leadership struggle in support of one side against another. By the time it intervened, the struggle had already been resolved. . . . The army's action was repugnant, but it was not unprofessional." (Joffe, 1993)

It goes without saying (but I will say it anyway) that regionalism . . . raises the sensitive question of the integrity of the modern Chinese state. . . . It may be that modern international interdependence is about to provide the first serious test for the unity of China." (Segal, 1994, pp. 4-5)

"These are uncertain times for the PLA, as they are for the rest of China. . . . One of the consequences of the PLA's economic participation is that it is now also caught up in this process of social re-examination. And military chiefs like change even less than they like war." (Cheung, 1994, p. 105)

"It would not be too much of an exaggeration to define the Chinese armed forces as the world's largest junkyard army." (Godwin, 1996, p. 55)

"Especially for medium to small powers, arms sales traditionally coincide with a variety of motivations, rather than with a grand strategy. China seems to be no exception. We should not focus on the cash-or-strategy debate, which seems pointless. Ever since 1977, China has been pursuing a mixture of both." (Godement, 1996, pp. 107–108)

"It is obvious that [the PLA is] working toward a greater joint capability; however, in some cases, it appears that the PLA considers an exercise to be joint when forces from different services merely arrive in the same area at the same time and then conduct exercise scenarios separate from each other." (Blasko, Klapakis, and Corbett, 1997, p. 253)

"In all, the tension in March 1996 was political in nature rather than military. . . . Clearly, to avoid a senseless and destructive war is in everybody's interest. . . . Taiwan must convey clearly that the only way it will [be] effectively drawn back to unity of any kind with the mainland is by attraction, not by coercion." (Yang, 1998, p. 152)

"This is a work in progress about a work in progress." (Jencks, 1999, p. 59)

And, finally, not a quote but a diagram: The figure depicting the PLA's current force structure will forever be known (notwithstanding the author's characteristic modesty in making no such claim) as the "Blasko pyramid." (Blasko, 1999, p. 261)

Such elegant wordsmithing and diagramming reminds us all that intellectuals can do serious work without taking themselves too seriously.

A Summing Up: What Have We Learned? And Where Are We Headed?

This somewhat truncated distillation of more than a decade of scholarship on Chinese military development yields some important conclusions. First, the skills and knowledge of the community of PLA analysts are far deeper and more diversified than 11 years ago. The CAPS conference has repeatedly provided an important outlet for younger analysts just beginning to make their professional mark. Equally significant, it has enabled the field to benefit hugely from the contributions of now-retired U.S. military attachés: DoD's loss has been the China field's gain. Second, the field's knowledge and skill base is ever more

specialized; "big picture" analysis is conspicuous by its absence from most of these volumes. Though all of us still communicate with one another, the challenge of systems integration seems as pressing for the community of China analysts as it is for the military forces that we are seeking to understand. We run the risk of becoming less able to talk with one another, and this would be a major loss. This possibility alone seems sufficient reason to continue annual conferences, though they seem ever more likely to assume the more thematic character of recent years. Third, the number of analysts has grown to such an extent that it is impossible to include everyone in a single professional gathering. The imperatives of selection (given the limited number of individuals who can be accommodated in a single meeting) run the additional risk that our annual gatherings will become too inbred, with newer entrants finding it ever more difficult to break into the "starting lineup." We must guard against this tendency, but I am not sure how this is best accomplished.

Fourth, the study of Chinese military affairs is increasingly and often unpleasantly embroiled in public debate, which in the broadest sense focuses on the presumed character of the Chinese state, and whether it can be accommodated to the regional and global security order. This is an issue in Taipei as well as in Washington. Other policy issues (e.g., Chinese participation in arms control and China's role in weapons proliferation) have also elevated the PLA to center stage. These new circumstances pose the issue of whether and how PLA analysts should be drawn into such policy debate. The realm of the practitioner and the realm of the researcher overlap in important but not always compatible ways. Analysts should always be prepared to inform policy debate, but at times of overwrought partisanship (and this is surely one of those times) this can be hugely limiting. At the end of the day, scholars and practitioners are involved in different lines of work.

However, heated policy controversies can affect research more than is often acknowledged. This is not necessarily bad, provided that researchers put their knowledge to effective use. We should always be prepared to inform and enlighten, but we should never be eager to please. Finding the appropriate balance between research pursuits and policy interests is ultimately an individual decision, but it injects a new element in PLA scholarship that did not exist in the past. I have no particular insights or suggestions on what we do about this, other than remain attentive to the larger audience our work can sometimes attract.

Let me close with a few final observations and suggestions for the future. These conference volumes pay little attention to theoretical and methodological issues. (The *China Quarterly* conference was a partial exception in this regard.)

CAPS volumes tend to be heavily descriptive and interpretive, with few analysts prepared to make their analytic frame of reference explicit, at least in terms of political science theory. This does not mean that PLA specialists lack awareness of these issues, only that most are prepared to leave these concerns to the more theoretically inclined. But increased attention to source materials, and the biases and filters that are associated with them, seems essential. The explosion of primary source materials from the mainland underscores the validation problem. Many intuitively assume that Chinese primary sources must be the "real thing," but this is not necessarily the case. The profusion of publishing outlets on the mainland, and the pervasiveness of the profit motive among mainland writers (including some in uniform), requires added care in how we interpret these materials. (Indeed, many of these writings are shameless plagiarisms of Western writings, begging the issue of whose views are being scrutinized.)

Second, we interact a good deal with one another, but not enough with other relevant professional constituencies. For example, it might prove worthwhile to invite one or more non-specialists to our meetings, perhaps even someone who is non-empathetic toward the PLA but nonetheless retains an open mind. This might make analysts more aware of the need to revisit major assumptions and arguments from time to time, if only because someone outside the "China mafia" would be there to ask these questions.

Another potentially useful invitee would be someone from the corporate world (e.g., someone deeply involved with technology transfer to China). These ranks include former attachés and, in some cases, important past contributors to PLA studies. (Richard Latham comes naturally to mind, but there are others, as well.) Granted, lapsed analysts have gravitated toward more profitable lines of work (one hopes!), but they know far too much not to include them in our deliberations. Indeed, a conference invitation might prove a very cost-effective way to keep former analysts engaged both professionally and interpersonally; there is always the possibility of them returning to the fold. (All is forgiven, the water's fine!) These individuals often know realities on the ground far better than most of us. Last and by no means least, we can hope to see a fuller complement of scholars from China in the years to come, assuming that it proves feasible for individual Chinese to contribute to these meetings. This need not be limited to those in uniform. But increased politicization of Chinese military affairs will affect these individuals in a palpable way, and could limit their contributions.

However, amidst all the compartmentalization and specialization and despite the risks of politicization, Chinese military studies continue to advance and

mature. These annual conferences, and the larger set of professional interactions they have helped stimulate, remain an essential component of scholarly interaction—Internet or no Internet. It is only in the testing of ideas and the scrutinizing of assumptions and evidence that understanding will continue to advance. In the final analysis, this must remain a primary function of these gatherings. These conferences exhibit an openness and civility that is rare in professional settings, and this must be preserved at all costs. The leadership of CAPS deserves ample credit for having conceived of these symposia and of mobilizing the resources needed to sustain them. Let us hope that a decade hence we can mark another decade of major accomplishment in probing the world's largest yet still elusive military institution.

10. Eight Points for Attention

By Ellis Joffe

The organizers of this conference volume have given me a mission impossible: to comment on a paper with which I agree entirely, and which says in a better way what I would have wanted to say. Nonetheless, missions have to be carried out, especially if assigned by organizers of future conferences. My plan, therefore, is appropriately modest: to expand a little (at the risk of repetition) on several, out of the many, notable points made in the paper. In remembrance of a commendable PLA revolutionary tradition, long forgotten by the PLA, I have code-named the plan "Eight Points for Attention."

Before proceeding, a word about Jonathan's paper. It is a pleasure to read, outstanding in the qualities which we have long come to expect of Jonathan Pollack's work. It is thoughtful, thorough, witty, lucid, and elegant. It is "an excursion into the intellectual development of a field," which is edifying, enjoyable, and appreciative of the efforts that went into this development. It will stand as an essential landmark for future excursions.

Which brings us to point number one: the great debt which the field of PLA studies owes to CAPS (and its predecessor SCPS). While this debt deserves a battery of powerful adjectives, it can also be expressed in a simple question: Where would the field be without CAPS? Without the decade of annual conferences, without the volumes that grew out of them, without the many additional occasional papers, and without the contacts and camaraderie nourished by the conferences? (And, also, without the conferences and volumes sponsored by the American Enterprise Institute.) The answer is obvious to all.

What is also obvious to us, but astonishing to an outsider, is that the flowering of PLA studies under CAP's aegis was initiated and sponsored not by a large organization, but by a small outfit headed by two outstanding leaders, Richard H. Yang and Andrew N. D. Yang, and backed by the indispensable logistic support of Yi-Su Yang and a small staff. For their gracious hospitality, friendly concern, research support, and ironclad policy of scholarly non-intervention, we owe a profound debt of gratitude—as we also do to IISS, *The China Quarterly*, and RAND, which collaborated on some of the volumes.

Point number two: The PLA has indeed been “discovered,” and its study has been politicized. Who would have imagined a decade ago that the U.S. government would plan to establish a Center for the Study of Chinese Military Affairs? Or, more ominously, that, as indicated by a Luce Foundation poll published in late October 1999, more than 50 percent of Americans would view China’s “military prowess” as a threat to U.S. security interests? Never mind that PLA specialists have been asking for years “what prowess?” when PLA capabilities were compared to U.S. military power.

Does this mean that our efforts over a decade have been useless in influencing the wider debate about China’s military potential? I do not think so. Whereas these efforts have obviously not changed views anchored in political interests, I believe (not too optimistically, I hope) that their fruits must have reached a larger public—as reflected in articles on the Chinese military by serious journalists and in op-ed pieces. Since the central role of the Chinese military in U.S.-China relations has become a fact of life, for better or worse, we should take advantage of it to expand PLA studies and to get the results to a broader audience.

Point number three: This is not easy, since the importance of the PLA for understanding Chinese politics and foreign policy has hardly been recognized by the academic disciplines. The most glaring and regrettable example of this is the absence of a chapter on the role of the PLA in the Cambridge History of China.

Here we have two strikes against us. First, China specialists in general (as other regional experts) have been largely viewed, at least until now, as second-class citizens by the theoreticians who dominate many political science departments. Second, analysts of Chinese military affairs have been often viewed as second-class citizens, if not non-resident aliens, by their own China colleagues in political science departments.

I do not suggest we try to convince them about the importance of our work. This is demeaning and fruitless. If a towering figure in political science could say a few years ago that “area studies have failed to generate scientific knowledge,” I can imagine how much “scientific knowledge” he would find in the kind of data we have to work with. Never mind that we make the best effort to do what we think is important and useful and not what is dictated by the availability of data that can produce (sometimes useless) “scientific knowledge.”

However, I do suggest we try to introduce courses in our subjects in political science departments and encourage graduate students to consider PLA studies as a field of specialization. A little dignified missionary work cannot hurt.

Point number four is sheer repetition, but I cannot resist the pleasure of saying it again. I, too, am struck by how much we got right, all the more so given the nature of our information. Looking at our work from the vantage point of hindsight, there is, indeed, very little that is downright wrong or foolish. Most of what we did has stood the test of time and new information. One reason, I suggest, is that we have approached our studies with appropriate modesty. We take our work seriously, but not ourselves.

Although our subject is the PLA, I am also struck by the diversity of topics that the subject covers, and its richness of information and analysis. One important reason for this, as Jonathan Pollack points out, is the auspicious addition of retired military attachés and military experts to our group. They have opened up new areas of study and have enriched the field with their expertise.

Point number five: I do not think the field can be faulted for not predicting the Tiananmen crisis and the PLA's actions. The reason is simple: It was not predicted by China's leaders and military. It could not have been. The imposition of martial law and the massacre were the result of an escalation process that was impelled by unforeseeable circumstances: The paralysis of the top leadership in the crucial initial stages; the presence of foreign media in the Square; the humiliation of Deng Xiaoping by the demonstrators during the Gorbachev visit; and the reaction of the Elders. However, if we could not predict the crisis, I think that our analyses and explanations, put forth right after the events, have not been altered by subsequent revelations.

Point number six: media exposure. Unlike some colleagues, I do not think the publicity surrounding the 1993 Hong Kong conference was a bad thing. If we want to highlight the importance of PLA studies, we need the cooperation of the media. As long as exposure does not affect the content of papers (and I do not see why it should) a little fame, even if fleeting, can be useful to the field.

Point number seven: What, asks Jonathan Pollack, do we do with the new glut of information at our disposal? I suggest what we should not do: We should not try to construct models or make comparisons just because this is demanded by some disciplines. I am not saying this because of my own limited abilities or because I think the PLA is a distinct field of study. I am saying this for three reasons.

One, the development of the PLA, whether in Party-army relations or military modernization, will continue to be in flux for several years. We should look for patterns and trends, but these will not have hardened to a point where they can underpin models. We know from experience how rapidly and sharply trends can change. We should use whatever models are appropriate as we follow the flow of PLA development, but not limit ourselves to any particular one.

Two, while insights from other armies are immensely useful in illuminating various aspects of the PLA, I do not think the same can be said for overarching comparisons. Without meaning to sound condescending, I do think that the PLA is unique: its road to power, its relations with the Party, its political involvement, its tortuous military modernization—these and other features make it so.

Three, despite the remarkable achievements of PLA studies, we are the first to admit that ours is “a work in progress.” Our knowledge is too little and too tentative to make the kind of definitive assessments necessary for models or comparisons.

Point number eight: If these random remarks have a self-congratulatory flavor, so be it. We deserve it.

Bibliography

- Kenneth W. Allen, Glenn Krumel, and Jonathan D. Pollack, *China's Air Force Enters the 21st Century* (Santa Monica: RAND, 1995).
- Kenneth Allen and Richard Latham, "Chinese Defense Reform: The Air Force as a Case Study," *Problems of Communism*, Vol. 40, No. 3 (1991).
- Erik Baark, "Military technology and absorptive capacity in China and India: implications for modernization," in Eric Arnett, ed., *Military Capacity and the Risk of War: China, India, Pakistan, and Iran* (Oxford: Oxford University Press, 1997).
- Karen Berney, "Dual-Use Technology Sales," *China Business Review* (July/August 1980).
- J. C. Berthelemy and Saadet Deger, *Conversion of Military Industries to Civilian Production in China* (Paris: Organization for Economic Cooperation and Development [OECD], June 1995).
- Thomas J. Bickford, "Regularization and the Chinese People's Liberation Army: An Assessment of Change," in *Asian Survey*, Vol. 40, No. 3, (May/June 2000).
- Richard A. Bitzinger and Bates Gill, *Gearing Up for High-Tech Warfare?: Chinese and Taiwanese Defense Modernization and Implications for Military Confrontation Across the Taiwan Strait, 199-2005* (Washington, D.C.: Center for Strategic and Budgetary Assessments, February 1996).
- Ray Bonds, ed., *The Chinese War Machine* (New York: Crescent Books, 1979).
- Joern Broemmelhoerster and John Frankenstein, eds., *Mixed Motives, Uncertain Outcomes: Defense Industry Conversion in China* (Boulder: Lynne Reinner, 1996).
- CAPS/RAND Conference on Chinese Hardware Acquisitions from Abroad, Oxford, England, June 1997.
- Anthony B. Chan, *Arming the Chinese: The Western Armaments Trade in Warlord China, 1920-1928* (Vancouver: University of British Columbia Press, 1982).
- Chu-yuan Cheng, "Growth and Structural Changes in the Chinese Machine Building Industry, 1952-1966," *China Quarterly*, No. 41 (January 1970).
- China: U.S. and European Union Arms Sales Since the 1989 Embargoes*, T-NSIAD-98-171 (Washington, D.C.: Government Accounting Office, 1998).

- The Chinese Armed Forces Today: The U.S. Defense Intelligence Agency Handbook of China's Army, Navy, and Air Force* (Englewood Cliffs: Prentice-Hall, 1979).
- Chinese Country Study Group [Yan Xuetong, et al.], "China," Ravinder Pal Singh, ed., *Arms Procurement Decision Making Volume 1: China, India, Israel, Japan, South Korea, and Thailand* (Oxford: Oxford University Press, 1998).
- Christopher M. Clarke, "Defense Modernization: How China plans to rebuild its crumbling 'Great Wall'," *China Business Review* (July/August 1984).
- Defense Science, Technology and Industry Monthly Report* (Hong Kong: Serold, Inc., monthly).
- Export Controls: Sale of Telecommunications Equipment to China*, NSIAD-97-5 (Washington, D.C.: General Accounting Office, 1997).
- Export Controls: Sensitive Machine Tool Exports to China*, NSIAD-97-4 5 (Washington, D.C.: General Accounting Office, 1997).
- Richard D. Fisher, "Foreign Arms Acquisitions and PLA Modernization," presented to the Conference on the People's Liberation Army, Wye Conference Center, Maryland, September 1997.
- Paul Humes Foltz, *From Swords to Ploughshares? Defense Industry Reform in the PRC* (Boulder: Westview Press, 1992).
- John Frankenstein, "Back to the Future: A Historical Perspective on Chinese Military Modernization," presented at the International Studies Association annual meeting, Anaheim, California, March 1986a.
- John Frankenstein, "Chinese Weapons Development: Process, Progress, Program?" in Charles D. Lovejoy, Jr., and Bruce W. Watson, eds., *Chinese Military Reforms: International and Domestic Implications* (Boulder: Westview Press, 1986b).
- John Frankenstein, "The People's Republic of China: arms production, industrial strategy, and problems of history" in Herbert Wulf, ed., *Arms Industry Limited* (Oxford: Oxford University Press, 1993).
- John Frankenstein and Bates Gill, "Current and Future Challenges Facing Chinese Defense Industries," *China Quarterly*, No. 146 (June 1996).
- Wendy Frieman, "Foreign Technology and Chinese Modernization," in Charles D. Lovejoy, Jr., and Bruce W. Watson, eds., *Chinese Military Reforms: International and Domestic Implications* (Boulder: Westview Press, 1986).
- Wendy Frieman, "China's Military R&D System: Reform and Reorientation," in Denis Fred Simon and Merle Goldman, eds., *Science and Technology in Post-Mao China* (Cambridge: Harvard University Press, 1989).
- Wendy Frieman, "China's defence industries," *Strategic Digest* (June 1993).

- Wendy Frieman, "Arms procurement in China: poorly understood processes and unclear results," in Eric Arnett, ed., *Military Capacity and the Risk of War: China, India, Pakistan, and Iran* (Oxford: Oxford University Press, 1997).
- Harry G. Gelber, *Technology, Defense, and External Relations in China, 1975-1978* (Boulder: Westview Press, 1979).
- Bates Gill, "Chinese Military Hardware and Technology Acquisitions of Concern to Taiwan," in James R. Lilley and Chuck Downs, eds., *Crisis in the Taiwan Strait* (Washington, D.C.: National Defense University Press, 1997).
- Bates Gill, "Chinese Military Modernization and Arms Proliferation in the Asia-Pacific," in Jonathan D. Pollack and Richard H. Yang, eds., *In China's Shadow: Regional Perspectives on Chinese Foreign Policy and Military Development* (Santa Monica: RAND, 1998).
- Bates Gill and Lonnie Henley, *China and the Revolution in Military Affairs* (Carlisle Barracks: Strategic Studies Institute, U.S. Army War College, May 1996).
- Bates Gill and Taeho Kim, *China's Arms Acquisitions from Abroad: A Quest for "Superb and Secret Weapons"* (Oxford: Oxford University Press, 1995).
- Richard E. Gillespie, "Marketing to the PLA," *The China Business Review* (July/August 1984).
- Paul H. B. Godwin, *The Chinese Communist Armed Forces* (Maxwell Air Force Base: Air University Press, June 1988), especially pp. 69-77.
- Paul H. B. Godwin and John J. Schulz, "Arming the dragon for the 21st century: China's defense modernization program," *Arms Control Today* (December 1993).
- Mel Gurtov, "Swords into market shares: China's conversion of military industry to civilian production," *China Quarterly*, No. 134 (June 1993).
- Handbook on the Chinese Armed Forces* (Washington, D.C.: Defense Intelligence Agency, July 1976).
- Handbook on the Chinese People's Liberation Army* (Washington, D.C.: Defense Intelligence Agency, November 1984).
- Hans Heymann, Jr., *China's Approach to Technology Acquisition, Part I—The Aircraft Industry* (Santa Monica: RAND, 1975).
- Sydney Jammes, "Military Industry," in Gerald Segal and William Tow, eds., *Chinese Defence Policy* (Urbana: University of Illinois Press, 1984).
- Harlan Jencks, *From Muskets to Missiles: Politics and Professionalism in the Chinese Army, 1945-1981* (Boulder: Westview Press, 1982), especially Chap. 6.

- James E. Katz, "Factors Affecting Military Scientific Research in the Third World," in James E. Katz, ed., *The Implications of Third World Military Industrialization* (Lexington: D. C. Heath, 1986).
- Thomas L. Kennedy, *The Arms of Kiangnan: Modernization in the Chinese Ordnance Industry, 1860-1895* (Boulder: Westview Press, 1978).
- P. R. Kumaraswamy, "Israel, China, and the United States: The Patriot Controversy," *Israel Affairs*, Vol. 3, No. 2 (Winter 1996).
- P. R. Kumaraswamy, "The Star and the Dragon: An Overview of Israeli-PRC Military Relations," *Issues & Studies*, Vol. 30, No. 4 (April 1994).
- Martin L. Lasater, *Arming the Dragon: How Much U.S. Military Aid to China?* The Heritage Lecture Series (Washington, D.C.: Heritage Foundation, March 1986).
- Richard J. Latham, "People's Republic of China: The Restructuring of Defense Industrial Policies," in James E. Katz, ed., *Arms Production in Developing Countries* (Lexington: Lexington Books, 1984).
- Richard J. Latham, "Implications of the Post-Mao Reforms on the Chinese Defense Industries," in Charles D. Lovejoy, Jr., and Bruce W. Watson, eds., *Chinese Military Reforms: International and Domestic Implications* (Boulder: Westview Press, 1986).
- Richard Latham, "China's defense industrial policy," in Richard H. Yang, ed., *SCPS PLA Yearbook, 1988/89* (Kaohsiung: Sun Yat-sen University, 1989).
- Ngok Lee, *China's Defence Modernisation and Military Leadership* (Sydney: Australia National University Press, 1989).
- John Wilson Lewis and Xue Litai, *China Builds the Bomb* (Stanford: Stanford University Press, 1988).
- John W. Lewis and Hua Di, "China's Ballistic Missile Programs: Technologies, Strategies, Goals," *International Security*, Vol. 17, No. 2 (Fall 1992).
- John Lewis and Xue Litai, *China's Strategic Seapower* (Stanford: Stanford University Press, 1994).
- James Mulvenon, *Chinese Military Commerce and U.S. National Security* (Santa Monica: RAND, July 1997).
- Barry Naughton, "The Third Front: defence industrialisation in the Chinese interior," *China Quarterly*, No. 115 (September 1988).
- Benjamin A. Ostrov, *Conquering Resources: The Growth and Decline of the PLA's Science and Technology Commission for National Defense* (Armonk: M. E. Sharpe, 1991).
- Michael Pillsbury, ed., *Chinese Views of Future Warfare* (Washington, D.C.: National Defense University Press, 1997).

Jonathan Pollack, *Defense Modernization in the PRC* (Santa Monica: RAND, 1979).

Report of the Select Committee on U.S. National Security and Military/Commercial Concerns with the People's Republic of China [Cox Committee Report] (Washington, D.C.: U.S. Government Printing Office, May 1999).

Thomas W. Robinson, "Chinese Military Modernization in the 1980s," *China Quarterly*, No. 90 (June 1982).

David Shambaugh, "Military Modernization and the Politics of Technology Transfer," *Contemporary China* (Fall 1979).

David L. Shambaugh, "China's Defense Industries: Indigenous and Foreign Procurement," in Paul H. B. Godwin, ed., *The Chinese Defense Establishment: Continuity and Change in the 1980s* (Boulder: Westview Press, 1983).

Mark A. Stokes, *China's Strategic Modernization: Implications for U.S. National Security* (United States Air Force Institute for National Security Studies, October 1997).

Mark A. Stokes, *China's Strategic Modernization: Implications for U.S. National Security*, paper prepared for the Project on the New American Century, July 1999.

Douglas Stuart and William Tow, "Chinese Military Modernization: The Western Arms Connection," *China Quarterly*, No. 90 (June 1982).

Douglas T. Stuart and William T. Tow, "Arms Sales," in U. Alexis Johnson, George R. Packard, and Alfred D. Wilhelm, Jr., eds., *China Policy for the Next Decade* (Boston: Oelschlager, Gunn & Hain, Publishers, 1984).

Leonard Sullivan, Jr., et al., "Trade and Technology Transfers," in U. Alexis Johnson, George R. Packard, and Alfred D. Wilhelm, Jr., eds., *China Policy for the Next Decade* (Boston: Oelschlager, Gunn & Hain, Publishers, 1984).

Michael D. Swaine, *The Modernization of the Chinese People's Liberation Army* (Seattle: National Bureau of Asian Research, 1994).

William T. Tow, "Arms Sales to China," in Gerald Segal and William Tow, eds., *Chinese Defence Policy* (University of Illinois Press, Urbana and Chicago, 1984).

William T. Tow, "Science and Technology in China's Defense," *Problems of Communism* (July/August 1985).

William C. Triplett, "Inside China's Scary New Military Industrial Complex," *Washington Post*, 8 May 1994.

U.S. Congress, Office of Technology Assessment, *Technology Transfer to China* OTA-ISC-340 (Washington, D.C.: U.S. Government Printing Office, July 1987).

Barry A. Walrath, *China: Defense Industrial Capabilities and Limitations* (U.S. Defense Logistics Agency, September 1977).

Kathleen A. Walsh, *U.S. Commercial Technology Transfers to The People's Republic of China* (Washington, D.C.: Office of Strategic Industries and Economic Security, Bureau of Export Administration, U.S. Department of Commerce, January 1999).

Larry M. Wortzel, "United States Export Control Policies and the Modernization of the China's Armed Forces," in Larry M. Wortzel, ed., *China's Military Modernization* (Westport: Greenwood Press, 1988).

Larry M. Wortzel, *China's Military Potential* (Carlisle Barracks: Strategic Studies Institute, U.S. Army War College, October 1998).

Chong K. Yoon, "Problems of Modernizing the PLA: Domestic Constraints," in Larry M. Wortzel, ed., *China's Military Modernization* (Westport: Greenwood Press, 1988).

References

- SCPS Yearbook on PLA Affairs-1987*, Richard H. Yang, ed., Kaohsiung: Sun Yat-sen Center for Policy Studies, 1987.
- SCPS PLA Yearbook: 1988/89*, Richard H. Yang, ed., Kaohsiung: Sun Yat-sen Center for Policy Studies, 1989.
- China's Military: The PLA in 1990/1991*, Richard H. Yang, ed., Kaohsiung: Sun Yat-sen Center for Policy Studies, 1991 (distributed by Westview Press).
- China's Military: The PLA in 1992/1993*, Richard H. Yang, ed., Taipei: Chinese Council of Advanced Policy Studies, 1993 (distributed by Westview Press).
- Chinese Regionalism: The Security Dimension*, Richard H. Yang, et al., eds. (Boulder: Westview Press, 1994).
- Chinese Economic Reform—The Impact on Security, Gerald Segal and Richard H. Yang, eds. (London and New York: Routledge, 1996) (for CAPS and the IISS).
- China's Military in Transition*, David Shambaugh and Richard H. Yang, eds. (Oxford: Clarendon Press, 1997) (for CAPS and *The China Quarterly*).
- In China's Shadow: Regional Perspectives on Chinese Foreign Policy and Military Development*, Jonathan D. Pollack and Richard H. Yang, eds. (Santa Monica: RAND, CF-137-CAPP, 1998).
- The People's Liberation Army in the Information Age*, James C. Mulvenon and Richard H. Yang, eds. (Santa Monica: RAND, CF-145-CAPP/AF, 1999).